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SCIENTIFIC MANAGEMENT

A LIST OF REFERENCES IN THE NEW YORK PUBLIC LIBRARY

1832

1. **Babbage,** Charles. On the economy of machinery and manufactures. London: Charles Knight, 1832. 1 p.l., xxiv, 387 p. 2. ed. 16°. **VBA**

2. **Twemlow,** G. On modes of obtaining important results by simple means. (Asiatic Society of Bengal. Journal. Calcutta, 1832. v. 1, p. 68–70, 195–198.) ***OHA**

1878

3. **Smith,** Frederic. Workshop management; a manual for masters and men. London: E. Menken [1878]. 1 p.l., iii–vi, 76 p. 5. ed. 12°. (Wyman's technical series.) **VNB**

1881

4. **Hall,** Albert F. Method of arranging and indexing drawings and patterns. [With discussion.] (American Society of Mechanical Engineers. Transactions, New York. v. 2, 1881, p. 369–379.) **VFA**

5. **Smith,** Oberlin. Nomenclature of machine details. [With discussion.] (American Society of Mechanical Engineers. Transactions, New York. v. 2, 1881, p. 358–369.) **VFA**

1885

6–7. **Metcalfe,** Henry. The cost of manufactures and the administration of workshops, public and private. New York: J. Wiley & Sons, 1885. 2 p.l., 322 p. illus. 8°. **TM**

1886

8. **Metcalfe,** Henry. The shop order system of accounts. (American Society of Mechanical Engineers. Transactions, New York. v. 7, May, 1886, p. 440–488.) **VFA**

9. **Towne,** Henry R. The engineer as economist. (American Society of Mechanical Engineers. Transactions, New York. v. 7, May, 1886, p. 428–432.) **VFA**

1889

10–11. **Towne,** Henry R. Gain sharing. (American Society of Mechanical Engineers. Transactions, New York. v. 10, May, 1889, p. 600–626.) **VFA**

1891

12. **Rowan,** James, and F. A. Halsey. The premium plan of paying for labor. (American Society of Mechanical Engineers. Transactions, New York. v. 12, June, 1891, p. 755–780.) **VFA**

Also printed in *Sibley journal of engineering,* Ithaca, N. Y., March, 1902, p. 219–237, *VDA.* Reprinted as chapter 11 of *Trade unionism and labor problems,* edited by J. R. Commons, 1905.

Contrasts this with other plans.

1893

13. **Taylor,** Frederick Winslow. Notes on belting. (American Society of Mechanical Engineers. Transactions, New York. v. 15, Dec., 1893, p. 204–259.) **VFA**

Discusses the administration of belting.

1895

14. **Outerbridge,** A. E. The educational influence of machinery. (Engineering magazine, New York. v. 9, May, 1895, p. 225–231.) **VDA**

15. **Taylor,** Frederick Winslow. A piece rate system; being a step toward partial solution of the labor question. (American Society of Mechanical Engineers. Transactions, New York. v. 16, 1895, p. 856–903.) **VFA**

Also printed in American Economic Association, *Economic studies,* v. 1, no. 2, June, 1896, p. 89–129, *TB,* and in C. B. Thompson, *Scientific management,* p. 636–683, *TM.* Also printed, in abstract, in *Engineering magazine,* New York, v. 10, Jan., 1896, p. 690–698, *VDA.*

1896

16. **Roland,** Henry. Six examples of successful shop management. (Engineering magazine, New York. v. 12, Oct.–Dec., 1896, Feb.–March, 1897, p. 69–85, 270–285, 395–412, 831–837, 994–1000; v. 13, April, 1897, p. 10–19.) **VDA**

1897

17. **Channing,** J. Parke. Mine accounts. (Engineering magazine, New York. v. 13, Sept., 1897, p. 926–933.) **VDA**

18. **Outerbridge,** A. E., jr. Labor saving machinery the secret of cheap production. (Engineering magazine, New York. v. 12, Jan., 1897, p. 650–656.) **VDA**

Shows that labor saving machinery and high priced intelligent mechanics will enable us to compete with cheap labor.

19. **Roland,** Henry. Cost-keeping methods in machine shop and foundry. (Engineering magazine, New York. v. 14, Oct., 1897–Jan., 1898, p. 56–63, 225–238, 464–472, 626–634.) **VDA**

20. —— Six examples of successful shop management. (Engineering magazine, New York. v. 12, Oct.–Dec., 1896, Feb.–March, 1897, p. 69–85, 270–285, 395–412, 831–837, 994–1000; v. 13, April, 1897, p. 10–19.) **VDA**

1898

21. **Norris,** H. M. A simple and effective system of shop cost-keeping. (Engineering magazine, New York. v. 16, Dec., 1898, Feb.–March, 1899, p. 384–396, 812–820, 957–968; v. 17, p. 76–87.) **VDA**

Describes a system of cost-keeping in shops of which the author has been in charge.

22. **Roland,** Henry. An effective system of finding and keeping shop-costs. (Engineering magazine, New York. v. 15, April, July–Sept., 1898, p. 77–86, 610–620, 749–758, 1000–1016; v. 16, Oct.–Nov., 1898, p. 37–48, 207–214.) **VDA**

Gives simplest cost-keeping system known, which begins and ends with the job ticket.

1899

23. **Browne,** Sir Benjamin C. Standardising in engineering construction. (Engineering magazine, New York. v. 18, Oct.–Dec., 1899, p. 33–40, 169–176, 403–409.) **VDA**

24. **Darlington,** P. J. Methods of remunerating labor. (Engineering magazine, New York. v. 17, June, Sept., 1899, p. 444–454, 925–936.) **VDA**

25. **Halsey,** F. A. The administration of the premium plan. (American machinist, New York. v. 22, July 6–13, 27, 1899, p. 609–611, 631–632, 691–695.) **VFA**

Shows how the plan is carried out in some shops where used.

26. —— Experience with the premium plan of paying for labor. (American machinist, New York. v. 22, March 9, 1899, p. 180–182.) **VFA**

At the Canadian Rand Drill Co., Sherbrooke, Que.

27. —— The premium plan criticised. (American machinist, New York. v. 22, June 22, 1899, p. 556–559.) **VFA**

28. —— Some questions regarding the premium plan with answers to them. (American machinist, New York. v. 22, March 23, 1899, p. 240–241.) **VFA**

29. **Hansel,** Charles. The evolution of safety in railway travel. (Engineering magazine, New York. v. 16, Jan., 1899, p. 599–609.) **VDA**

30. **Lewis,** J. Slater. Works management for the maximum of production. (Engineering magazine, New York. v. 18, Oct.–Dec., 1899, p. 59–68, 201–208, 361–368; v. 19, May, 1900, p. 211–220.) **VDA**

31. **Orcutt,** H. F. L. Machine-shop management in Europe and America. (Engineering magazine, New York. v. 16, Jan.–March, 1899, p. 549–555, 703–710, 921–931; v. 17, April–Aug., 1899, p. 15–22, 268–276, 384–398, 594–601, 743–749.) **VDA**

32. **Roland,** Henry. The revolution in machine-shop practice. (Engineering magazine, New York. v. 18, Oct., 1899–Feb., 1900, p. 41–58, 177–200, 369–388, 530–549, 729–746.) **VDA**

1900

33. **Arnold,** Horace L. The expense account of the machine shop. (Engineering magazine, New York. v. 20, Dec., 1900, p. 365–372.) **VDA**

Deals with the principles and systems of factory accounting and the aids thereto.

34. **Charleton,** A. G. The general principles of successful mine management. (Engineering magazine, New York. v. 20, Nov., 1900, p. 235–246; Jan., 1901, p. 685–702.) **VDA**

"The principles of management are akin to those of any industrial undertaking but their adaptation is special to the field."

35. **Church,** A. Hamilton. The meaning of commercial organization. (Engineering magazine, New York. v. 20, Dec., 1900, p. 391–398.) **VDA**

The strong feature of this article is the demonstration that organization is an integral and even basal part of successful work.

1900, continued.

36. Cokely, M. Piece work as an agency in machine-shop cost reduction. (Engineering magazine, New York. v. 20, Nov., 1900, p. 192–198.) **VDA**

The author's point of view is that of a man standing between employer and workmen where he commands a complete view of both.

37. Diemer, Hugo. Commercial organization of the machine shop. (Engineering magazine, New York. v. 19, June – Sept., 1900, p. 342–347, 511–517, 705–711, 892–898; v. 20, Nov., 1900, p. 229–234.) **VDA**

The order follows the natural course of work through the shop and the whole scheme is adapted to small and moderate sized works as well as large ones.

38. —— Functions and organization of the purchasing department. (Engineering magazine, New York. v. 18, March, 1900, p. 833–836.) **VDA**

39. Halsey, F. A. The economics of the premium plan. (American machinist, New York. v. 23, May 3, 1900, p. 418–420.) **VFA**

Shows that the common impression that the premiums are an additional charge upon production is unfounded.

40. Lewis, J. Slater. Works management for maximum production. (Engineering magazine, New York. v. 19, May, 1900, p. 211–220.) **VDA**

41. New shop methods a corollary of modern machinery. (Engineering magazine, New York. v. 19, June, 1900, p. 369–372.) **VDA**

An editorial comment.

42. Norris, H. M. Actual experience with the premium plan. (Engineering magazine, New York. v. 18, Jan., 1900, p. 572–584.) **VDA**

43. O'Connell, James. Piece work not necessary for best results in the machine shop. (Engineering magazine, New York. v. 19, June, 1900, p. 373–380.) **VDA**

44. Redl, Eugen. Elemente der Organisation und Administration industrieller Unternehmungen. Als Leitfaden für Studierende, Betriebstechniker, Gewerbetreibende und Fabrikanten. Leipzig: F. Deuticke, 1900. ix, 290 p. 4°. **TDO**

1901

45. Allen, Leicester. A project for a bureau of engineering data. (Engineering magazine, New York. v. 22, Dec., 1901, p. 408–413.) **VDA**

Pleads for the extension of bureaus of engineering, particularly in the field of dynamic engineering.

46. Barnes, George Nicol. Uses and abuses of organisation among employers and employees. (Engineering magazine, New York. v. 20, Jan., 1901, p. 560–567.) **VDA**

The old trade unions vs. wisely organized labor.

47. Blakemore, William. The management and control of the colliery. (Engineering magazine, New York. v. 21, July – Aug., 1901, p. 563–570, 735–740.) **VDA**

Takes up control of hoisting and surface arrangements.

48. Booth, W. H. Modern systems for shop work. (Electrical review, London. v. 49, Aug. 23, 1901, p. 330–332.) †† **VGA**

Discusses the practice in British workshops.

49. Browne, Sir Benjamin C. The application of piece work and the premium plan. (Engineering magazine, New York. v. 20, Feb., 1901, p. 913–919.) **VDA**

A valuable summary of the whole question.

50. —— Uses and abuses of organizations among employers and employees. (Engineering magazine, New York. v. 20, Jan., 1901, p. 553–559.) **VDA**

What employers may prevent and effect by united action.

51. Canniff, W. H. The discipline and control of railway employees. (Engineering magazine, New York. v. 20, Jan., 1901, p. 753–760.) **VDA**

Mr. Canniff's review stands as the formation of a policy so surely founded that it has stood the trial of daily application in every aspect of labor matters and general economic conditions.

52. Church, A. Hamilton. Proper distribution of establishment charges. (Engineering magazine, New York. v. 21, July – Sept., 1901, p. 508–517, 725–734, 904–912; v. 22, Oct. – Nov., 1901, p. 31–40, 231–240, 367–376.) **VDA**

The problem of determining the true proportion of expense so that its price may be fixed to return its true proportion of profit.

53. Ennis, William Duane. The engineering management of industrial works. (Engineering magazine, New York. v. 22, Nov., 1901, p. 241–246.) **VDA**

Argues for the man scientifically and practically trained in the utilization of forces and the handling of materials.

54. Gantt, Henry Laurence. Bonus system of rewarding labor by the Bethlehem Steel Co. (Engineering news, New York. v. 46, Dec. 12, 1901, p. 460–462.) **VDA**

55. Gunn, James Newton. Cost keeping; a subject of fundamental importance. (Engineering magazine, New York. v. 20, Jan., 1901, p. 703–708.) **VDA**

"The author draws clearly the outlines of the province of the production or industrial engineer."

56. Hardman, John E. The practical management of mining operations. (Engineering magazine, New York. v. 20, Jan., 1901, p. 665–684.) **VDA**

57. Higgins, Milton P. Intensified production and its influence upon the worker. (Engineering magazine, New York. v. 20, Jan., 1901, p. 568–576.) **VDA**

Shows that its influence does not narrow the powers and life of the individual workman.

1901, continued.

58. Lazenby, A. Advanced methods in a British engineering workshop. (Engineering magazine, New York. v. 22, Dec., 1901, p. 377–397.) **VDA**

A description of the Victoria works.

59. Lewis, J. Slater. The mechanical and commercial limits of specialisation. (Engineering magazine, New York. v. 20, Jan., 1901, p. 709–716.) **VDA**

60. Longmuir, Percy. Opportunities for bettering the work of the foundry. (Engineering magazine, New York. v. 22, Oct., 1901, p. 60–68.) **VDA**

Sketches conditions as they are and as they might be.

61. Moses, Percival Roberts. Cost determination in isolated electric plants. (Engineering magazine, New York. v. 20, March, 1901, p. 1082–1088.) **VDA**

Considers the small individual power plant.

62. Norris, H. M. The premium plan of labor remuneration. (Engineering magazine, New York. v. 20, Jan., 1901, p. 631–640.) **VDA**

Written from the standpoint of a practical employer of the system.

63. Orcutt, H. F. L. Shop arrangement as a factor in efficiency. (Engineering magazine, New York. v. 20, Jan., 1901, p. 717–722.) **VDA**

Solution of the problem of shop design and arrangement.

64. Patterson, J. H. Altruism and sympathy as factors in works administration. (Engineering magazine, New York. v. 20, Jan., 1901, p. 577–602.) **VDA**

Gives examples of the manner in which the comfort of employees is considered in well known establishments in Europe and America.

65. Rowan, James. A premium system of remunerating labor. (Institution of Mechanical Engineers. Proceedings, London. 1901, parts 3–5, Sept., 1901, p. 865–882.) **VFA**

66. Thompson, Sanford E. The Taylor differential piece-rate system. (Engineering magazine, New York. v. 20, Jan., 1901, p. 617–630.) **VDA**

It is so manifestly in the line of reason and of progress in the economy of production that the final outcome is in no sort of doubt.

67. Weir, William, and J. R. Richmond. Workshop methods: some efficiency factors in an engineering business. [With discussion.] (Institution of Mechanical Engineers. Proceedings, London. 1901, parts 3–5, Sept., 1901, p. 895–918.) **VFA**

A paper read at the International Engineering Congress, Glasgow, in 1901.

68. Works management number of Engineering magazine. (Engineering magazine, New York. v. 20, Jan., 1901.) **VDA**

A hand-book for works managers.

1902

69. Arnold, Horace L. Cost-finding methods for moderate-sized shops. (Engineering magazine, New York. v. 24, Dec., 1902, p. 385–395.) **VDA**

Devoted to practical cost-keeping systems suited to a small shop or to a separate department of a large shop.

70. Carpenter, Charles U. Money-making management for workshop and factory. (Engineering magazine, New York. v. 22, Feb., 1902. p. 693–720; v. 23, May–Aug., 1902, p. 195–206, 413–424, 562–572, 733–740; v. 24, Oct., 1902, p. 89–97.) **VDA**

Mr. Carpenter writes from experience in an enterprise which stands as a model of business success, of excellence in the mechanical quality of its output and enlightened methods of handling labor.

71. Ennis, William Duane. Intensified production and industrial investment. (Engineering magazine, New York. v. 23, Sept., 1902, p. 895–900.) **VDA**

This article is particularly interesting in its recognition of the variables which should and must modify the decision upon particular items sometimes apparently running counter to the general policy of "intensification."

72. Falconer, Kenneth. The factory office. (Engineering magazine, New York. v. 23, April–July, 1902, p. 70–74, 253–262, 386–394, 573–582.) **VDA**

Shows that the factory office may be separated from the general system of accounting.

73. —— The numerical recording of shipping and manufacturing orders. (Engineering magazine, New York. v. 22, March, 1902, p. 881–888.) **VDA**

The card index system in shop administration.

74. Gantt, Henry Laurence. Bonus system of rewarding labor. (American review of reviews, New York. v. 26, Sept., 1902, p. 326–328.) ***DA**

75. Halsey, F. A. The origin of the premium plan — a personal statement. (American machinist, New York. v. 25, Jan. 9, 1902, p. 53–54.) **††VFA**

76. Longmuir, Percy. The economical significance of a high wage rate. (Engineering magazine, New York. v. 24, Nov.–Dec., 1902, p. 223–230, 396–401.) **VDA**

77. —— Emotion and reason among British workingmen. (Engineering magazine, New York. v. 22, March, 1902, p. 847–854.) **VDA**

Shows the need for the substitution of reason for the mere influence of emotion.

78. —— Recording and interpreting foundry costs. (Engineering magazine, New York. v. 23, Sept., 1902, p. 887–894.) **VDA**

Concerned particularly with the commercial side of foundry management.

79. McFarland, Walter M. The growth of economy in marine engineering. (Engineering magazine, New York. v. 22, March, 1902, p. 829–846.) **VDA**

1902, continued.

80. National Cash Register Co. (Iron trade review, Cleveland. v. 35, May 1, 1902, p. 53–63.) 3–†† VHA

Explains system adopted and its success.

81. Parsons, Isaac D. The economy of isolated electric plants. (Engineering magazine, New York. v. 22, Jan.–Feb., 1902, p. 573–588, 721–736.) VDA

Investigation as to economy of generating electricity in an isolated plant or from a central station.

82. Rowan, James. The premium plan at the works of David Rowan & Co., Glasgow, Scotland. (American machinist, New York. v. 25, Jan. 9, 1902, p. 49–53.) †† VFA

Explains system used.

83. Siebert, G. The commercial management of engineering works. (Engineering magazine, New York. v. 22, Feb., 1902, p. 653–658.) VDA

84. Simonet, Jules. Organisation des services d'une usine. (Revue de mécanique, Paris. v. 10, May 31, 1902, p. 429–465.) VFA

Discusses details of works organization with a complete scheme for the arrangement and administration of a manufacturing estate.

85. Some aspects of workshop management. (Engineer, London. v. 94, July 4, 1902, p. 1, July 18, p. 51–52, Aug. 1, p. 101, Aug. 15, p. 154–155, Aug. 29, p. 201, Sept. 12, p. 249–250, Sept. 26, p. 293–294, Oct. 10, p. 342–343.) VA

A series of articles from the point of view of the British manufacturer discussing systems of management as they should be conducted.

86. Taylor, William. The science of the workshop. (Engineering, London. v. 74, Sept. 19, 1902, p. 394–395.) VDA

Discusses materials, processes and tools, tracing the foundation of this science.

1903

87. Andrews, Ian. The commercial management of factories. (Engineering magazine, New York. v. 25, July, 1903, p. 539–545.) VDA

Considers the relations and functions which the office manager should bear to the cost of production.

88. Arnold, Horace L. Purchase by the organized factory. (Engineering magazine, New York. v. 25, June, 1903, p. 399–408.) VDA

This treats of the systematic knowledge and control of the materials coming into a shop.

89. Barth, Carl George. Slide rules for the machine shop as a part of the Taylor system of management. (American Society of Mechanical Engineers. Transactions, New York. v. 25, Dec., 1903, p. 49–62.) VFA

Reprinted in C. B. Thompson, *Scientific management*, p. 405–419, *TM*.

90. Buchanan, Robert. Foundry management in the new century. (Engineering magazine, New York. v. 24, Dec., 1902–March, 1903, p. 369–384, 515–540, 695–713, 879–895; v. 25, April–June, 1903, p. 49–72, 215–226, 409–414.) VDA

A systematic review of the best foundry practice, surveying the entire field of equipment and management.

91. Colwell, C. A. Cost reduction by the use of the premium plan. (Engineering magazine, New York. v. 25, May, 1903, p. 227–236.) VDA

Five months practical personal experience introducing the premium plan into a large shop.

92. Converse, John W. Some features of the labor system and management at the Baldwin Locomotive Works. (American Academy of Political and Social Science. Annals, Philadelphia. v. 21, 1903, p. 1–9.) VDA

93. Day, Charles. The machine shop problem. (American Society of Mechanical Engineers. Transactions, New York. v. 24, June, 1903, p. 1302–1321.) VFA

94. Diemer, Hugo. Cost finding methods for moderate sized shops. (Engineering magazine, New York. v. 24, Jan., 1903, p. 577–589.) VDA

Furnishes a working description of a practical system in actual use in a shop.

95. —— The fixing of piece work. (Engineering magazine, New York. v. 26, Oct., 1903, p. 169–176.) VDA

Shows that determining of correct rates is the fundamental starting point of any system.

96. Falconer, Kenneth. Cost finding methods for moderate-sized shops. (Engineering magazine, New York. v. 25, April, 1903, p. 89–98.) VDA

The shop system of the Canadian Composing Co.

97. Gantt, Henry Laurence. A graphical daily balance in manufacture. (American Society of Mechanical Engineers. Transactions, New York. v. 24, June, 1903, p. 1322–1336.) VFA

98. —— Modifying systems of management. (American Society of Mechanical Engineers. Transactions, New York. v. 25, Dec., 1903, p. 63–67.) VFA

Advocates Mr. Taylor's methods.

99. Hess, Henry. Manufacturing: capital, costs, profits and dividends. (Engineering magazine, New York. v. 26, Dec., 1903, p. 367–379.) VDA

Applies the results of cost-finding methods to the ultimate questions of profit or loss in production.

100. Jacobs, E. The general principles of mine accounting. (Engineering magazine, New York. v. 25, April, 1903, p. 73–80.) VDA

Defines the scope, the function and the basic principles of the science of systematic record as applied to mines.

1903, continued.

101. Kershaw, John B. C. The promotion of industrial efficiency and national prosperity. (Engineering magazine, New York. v. 25, June – Aug., 1903, p. 329–341, p. 533–538, 641–646.) **VDA**

Considers how to increase the productive capacity of the worker.

102. King, Charles R. The tools and methods of a Swiss locomotive works. (Engineering magazine, New York. v. 25, Sept., 1903, p. 841–855.) **VDA**

103. Magrutor, William. Cost-finding methods for moderate-sized shops. (Engineering magazine, New York. v. 24, March, 1903, p. 870–878.) **VDA**

Description of a practical system in actual use.

104. Moses, Percival Robert. Economy in the design and operation of electric plants. (Engineering magazine, New York. v. 24, Jan., 1903, p. 563–576.) **VDA**

105. Perrigo, Oscar E. Shop construction. (Railway machinery, New York. v. 1, Oct., 1902, p. 561–563; v. 2, Nov., 1902 – May, 1903, p. 17–20, 73–75, 128–131, 182–185, 238–242, 287–288, 336–337.) **VFA**

106. Richards, Frank. Is anything the matter with piece work? (American Society of Mechanical Engineers. Transactions, New York. v. 25, Dec., 1903, p. 68–92.) **VFA**

Summarized, with abstract of discussion, in *American machinist,* v. 26, p. 1733–1734, *VFA.*

107. Rowan, James. A premium system applied to engineering workshops. (Institution of Mechanical Engineers. Proceedings, London. 1903, parts 3–4, March 20, 1903, p. 203–261.) **VFA**

Gives experience of five years working of this system.

108. Taylor, Frederick Winslow. Shop management. (American Society of Mechanical Engineers. Transactions, New York. v. 24, June, 1903, p. 1337–1480.) **VFA**

109. Van Yorx, John H., jr. A remodeled piece work system. (Engineering magazine, New York. v. 25, Aug., 1903, p. 699–713.) **VDA**

In actual use.

110. Walker, W. O. The value of incentives: a letter. (American machinist, New York. v. 26, July 9, 1903, p. 996–997.) **VFA**

111. Watson, Egbert P. The ethics of workshop management. (Engineering magazine, New York. v. 26, Nov., 1903, p. 250–254.) **VDA**

Deals with the practical running of the shop.

1904

112. Ashford, John. Stores arrangement as a factor in shop management. (Engineering magazine, New York. v. 28, Oct. – Nov., 1904, p. 93–100, 177–198.) **VDA**

Illustrates the practice of many of the newest establishments of the United States.

113. —— The tool room and its function in cost-reduction. (Engineering magazine, New York. v. 27, July – Aug., 1904, p. 521–548, 775–795.) **VDA**

Shows the importance of keeping the equipment at the point of highest efficiency.

114. Barnes, George Nicol. Wage systems and their bearing upon output. (Engineering magazine, New York. v. 27, July, 1904, p. 490–497.) **VDA**

Represents the attitude of the best elements of organized labor toward the newer wage system.

115. Burlingame, L. D. The drafting department as a factor in economical shop management. (Engineering magazine, New York. v. 27, July, 1904, p. 589–604.) **VDA**

116. Carpenter, Charles U. Inspection as a factor in cheap production. (Engineering magazine, New York. v. 27, July, 1904, p. 583–588.) **VDA**

117. Collins, D. C. Newman. The engineering of industrial buildings. (Iron age, New York. v. 74, Dec. 1, 1904, p. 30–31.) †† **VDA**

Discusses the development of industrial works, modern machinery, scientific methods, etc.

118. Diemer, Hugo. A bibliography of works management. (Engineering magazine, New York. v. 27, July, 1904, p. 626–658.) **VDA**

With an editorial introduction and an index to the current literature of the subject prepared by the editors of the *Engineering magazine.*

119. —— Staff and departmental organization. (Iron trade review, Cleveland. v. 37, May 5, 1904, p. 74–75.) 3 – †† **VHA**

Remarks on advantages of organization and suggestions for making a study of the system best suited to the factory.

120. Emerson, Harrington. A rational basis for wages. (American Society of Mechanical Engineers. Transactions, New York. v. 25, June, 1904, p. 868–881.) **VFA**

121. Ennis, William Duane. Steam costs in industrial managements. (Engineering magazine, New York. v. 28, Oct., 1904, p. 86–92.) **VDA**

Discusses the subject from the standpoint of the manager of a number of associated plants.

122. Gantt, Henry Laurence. Application of scientific methods to the labor problem. (American machinist, New York. v. 27, Oct. 20, 1904, p. 1394–1396.) †† **VFA**

A paper read before International Congress of Arts and Sciences, St. Louis World's Fair.

1904, continued.

123. **Henszey,** J. Wilmer. The organization and methods of a modern industrial works. (Franklin Institute. Journal, Philadelphia. v. 158, Dec., 1904, p. 401–409.) **VA**

Describes the management of the Baldwin Locomotive Works in Philadelphia.

124. **Hess,** Henry. Wage-paying methods from the viewpoint of invested capital. (Engineering magazine, New York. v. 27, June, 1904, p. 409–416.) **VDA**

125. —— Wage-paying methods from the view-point of the workman. (Engineering magazine, New York. v. 27, April–May, 1904, p. 27–35, 172–186.) **VDA**

Takes account of all elements entering the problem.

126. —— Work design as a factor in manufacturing economy. (Engineering magazine, New York. v. 27, July, 1904, p. 499–520.) **VDA**

The concrete example of a design which was actually carried out.

127. **Neville,** Ralph. The conditions of maximum productive efficiency. (Engineering magazine, New York. v. 27, July, 1904, p. 481–489.) **VDA**

128. **Perrigo,** Oscar E. Machine shop management. (Iron trade review. Cleveland. v. 37, Dec. 1, 1904, p. 72–74.) **3–†† VHA**

Deals with the management of a model machine shop in a general way.

129. **Schiller,** B. A German view of the premium plan. (American machinist, New York. v. 27, Feb. 18, 1904, p. 208–210; Feb. 25, 1904, p. 246–248.) **†† VFA**

Abstract of paper published in *Zeitschrift des Vereines deutscher Ingenieure,* Aug. 22, 1903.

130. **Seeds,** Russel M. Organizing the machinery-selling department. (Engineering magazine, New York. v. 27, Aug., 1904, p. 762–767.) **VDA**

Commercial rather than technical.

131. **Seward,** George H. Mechanical aids in factory-office economy. (Engineering magazine, New York. v. 27, July, 1904, p. 605–625.) **VDA**

Points out the directions and extent to which mechanical aids may be used in a factory office.

132. **Thompson,** Albert W. Cost keeping and shop statistics for a repair shop. (Engineering magazine, New York. v. 27, May, 1904, p. 201–216.) **VDA**

The shop described represents a very large class and one to which it seems very hard to adapt an exact cost-keeping system.

133. **Vauclain,** S. M. The system of apprenticeship at the Baldwin Locomotive Works. (Engineering magazine, New York. v. 27, June, 1904, p. 321–333.) **VDA**

134. **Watson,** Egbert P. Obsolete methods and current practice in shop administration. (Engineering magazine, New York. v. 28, Nov., 1904, p. 211–219.) **VDA**

1905

135. **Arnold,** Horace L. The stores methods of the Pond Machine-Tool Works. (Engineering magazine, New York. v. 28, March, 1905, p. 919–941.) **VDA**

136. **Auerbacher,** Louis J. Shop system for electrical contractors. (American electrician, New York. v. 17, Oct., 1905, p. 513–517.) **†† VGA**

Describes a system suitable for a concern doing a general contracting and jobbing business.

137. **Browning,** Earl Harrison. The general stores-keeping department of the Browning Engineering Co. (Engineering magazine, New York. v. 29, June, 1905, p. 359–380.) **VDA**

138. **Buel,** A. W. Cost keeping on general contract work. (Engineering magazine, New York. v. 28, March, 1905, p. 971–978; v. 29, May, Aug., 1905, p. 243–254, 707–718.) **VDA**

139. **Burton,** Francis G. The commercial management of engineering works. Manchester, Eng.: Scientific Pub. Co., 1905. 432 p. 2. ed. 8°. **TM**

140. **Cook,** Charles B. Factory management; a collection of facts connected with purchasing, receiving, shipping, sales, cost, employment, and payroll departments. (Business man's magazine, Detroit, Mich. v. 18, Sept., 1905, p. 461–470, Nov., 1905, p. 841–848, Jan., 1906, p. 96–114, March, 1906, p. 98–110, May, 1906, p. 152–164.) **TMA**

141. **Cowing,** John P. Cost keeping in construction and contract work. (Engineering magazine, New York. v. 29, Sept., 1905, p. 921–928.) **VDA**

Illustrates a method for keeping the cost of contract work in the main office.

142. **Deighton,** H. Brass foundry record and costs. (Engineering magazine, New York. v. 30, Oct., 1905, p. 48–56.) **VDA**

143. **Diemer,** Hugo. A combined bonus and premium system. (Engineering magazine, New York. v. 29, Aug., 1905, p. 719–730.) **VDA**

144. **Differential** piece rates. (Engineering, London. v. 80, Sept. 29, 1905, p. 413–414.) **†† VDA**

Editorial.

145. **Emerson,** R. Care and control of the small tool equipment in the shop. (Engineering magazine. New York. v. 28, Feb., 1905, p. 793–803.) **VDA**

Deals with care and upkeep of the small tool equipment.

1905, continued.

146. Gaines, Morrell W. Tabulating-machine cost-accounting for factories of diversified product. (Engineering magazine, New York. v. 30, Dec., 1905, p. 364–373.) **VDA**

147. Henn, A. W. The stores system of the National-Acme Manufacturing Co. (Engineering magazine, New York. v. 29, May, 1905, p. 196–210.) **VDA**

Deals with successful stores system in general use.

148. Moses, Percival Robert. The economy of small-sized coal for the power plant. (Engineering magazine, New York. v. 28, Feb., 1905, p. 753–760.) **VDA**

A practical study of the matter as it affects the cost of operating the power plant.

149. Porter, H. F. J. The higher law in the industrial world. (Engineering magazine, New York. v. 29, Aug., 1905, p. 641–655.) **VDA**

150. Querton, Louis. L'augmentation du rendement de la machine humaine. Bruxelles: Misch & Thron, 1905. xii, 216 p. illus. 12°. (Instituts Solvay. Travaux de l'Institut de sociologie. Actualités sociales. [no. 6.]) **TM**

151. Snow, Walter B. Working examples of successful stores management. (Engineering magazine, New York. v. 29, Sept., 1905, p. 879–891.) **VDA**

The systems and methods of the B. F. Sturtevant Co.

1906

152. Becker, O. M. The square deal in works management. (Engineering magazine, New York. v. 30, Jan.–March, 1906, p. 536–554, 660–687, 823–849; v. 31, April, 1906, p. 38–59.) **VDA**

Actual examples of successful works and factories all over the country showing what they do and how it pays.

153. Bibliography of scientific management. (In: Engineering index annual, 1906. Compiled from the Engineering index published monthly in the Engineering magazine during 1906.) **VD**

154. Burns, W. New shop methods from the machinist's point of view. (Engineering magazine, New York. v. 31, April, 1906, p. 93–96.) **VDA**

Treats of the ideals and the attitude of mind of the man in the shop.

155. Church, Alexander Hamilton. Cost and time keeping outfit of the Taylor system. (American machinist, New York. v. 29, Dec. 13, 1906, p. 761–763.) †† **VFA**

"Some conveniences and short cuts of obvious utility."

156. Colwell, James V. V. Modern equipment and management of a water-pipe foundry. (Engineering magazine, New York. v. 32, Nov., 1906, p. 248–256.) **VDA**

Principles apply to economical foundry management in any line.

157. Dodge, James Mapes. A history of the introduction of a system of shop management. (American Society of Mechanical Engineers. Transactions, New York. v. 27, May, 1906, p. 720–729.) **VFA**

The experience of the Link Belt Co., Philadelphia, described by its president.

Reprinted in C. B. Thompson, *Scientific management*, p. 226–231, *TM*.

158. Eggleston, D. C. Economy in shop management. (American machinist, New York. v. 29, Nov. 15, 1906, p. 627–628.) †† **VFA**

Conditions leading to minimum costs of production. Suggestions for savings in prime costs.

159. Fry, C. H. The working of the premium system on the Santa Fe. (Railway age gazette, New York. v. 41, Nov. 30, 1906, p. 476–481, Dec. 7, 1906, p. 504–507.) **TPB**

160. Hathaway, H. K. A discussion of Mr. Taylor's "Art of cutting metals." (American Society of Mechanical Engineers. Transactions, New York. v. 28, Dec., 1906, p. 287–290.) **VFA**

161. Jacobs, H. W. Organization and economy in the railway machine shop. (Engineering magazine, New York. v. 31, Sept., 1906, p. 897–908; v. 32, Oct., 1906–Jan., 1907, p. 21–34, 177–195, 339–351, 523–534.) **VDA**

Describes methods which have been tried out in the shops of one of the greatest transcontinental lines.

162. Jessop, F. W. A stock-keeping system for general stores. (Engineering magazine, New York. v. 31, May, 1906, p. 215–230.) **VDA**

System described is in actual use under direction of the author.

163. Knowlton, H. S. The cost-stores system of a modern boiler manufacturing plant. (Engineering magazine, New York. v. 32, Sept., 1906, p. 45–57.) **VDA**

164. Koller, W. R. The passage of an order through office and shop. (Brooklyn Engineers' Club. Proceedings, Brooklyn. 1906, p. 91–130.) **VDA**

Follows steps of order and part of routine in office and shop which bears directly on its passage.

165. Le **Paiement** des salaires par de "differential system." (Le Génie civil, Paris. v. 48, April 7, 1906, p. 380–381.) †† **VA**

166. Perry, Thomas Doane. Economical equipment and management of the drafting room. (Engineering magazine, New York. v. 31, June, 1906, p. 366–377.) **VDA**

Offers not only argument but an example of modern organization.

1906, continued.

167. Shadwell, Arthur. Industrial efficiency; a comparative study of industrial life in England, Germany and America. London: Longmans, Green and Co., 1906. 2 v. 8°. **TDI**

168. Taylor, Frederick Winslow. The art of cutting metals. (American Society of Mechanical Engineers. Transactions, New York. v. 28, Dec., 1906, p. 31–350.) **VFA**

169. Thompson, Albert W. Systems for simplifying shop supervision. (Engineering magazine, New York. v. 31, July, 1906, p. 873–883.) **VDA**

Describes simple methods almost self operating and the few forms which have been found adequate in the conduct of the shops under his charge.

170. Watson, Egbert P. Modern factory management. (Cassier's magazine, New York. v. 31, Dec., 1906, p. 106–112.) **VDA**

Discusses phases of shop administration, illustrating by examples the qualities of a successful manager.

171. —— Typical factory systems, and their practical results. (Engineering magazine, New York. v. 31, July, 1906, p. 540–550.) **VDA**

1907

172. Arbeiter, Max. Richtige Arbeitsdisposition, ein richtiger Faktor des finanziellen Erfolges. (Elektrotechnik und Maschinenbau, Wien. Jahrg. 25, June 9, 1907, p. 440–443.) †† **VGA**

Discusses cost keeping, works organization, etc., with examples.

173. Cardullo, Forest R. Fixing premium rates discussed. (American machinist, New York. v. 30, Aug. 1, 1907, p. 157–158.) †† **VFA**

Condemns old methods and suggests a new one based on minimum total cost and no limit to possible earnings.

174. Carpenter, C. U. Profit-making in shop and factory management. (Engineering magazine, New York. v. 32, Jan.–March, 1907, p. 481–492, 769–780, 929–938; v. 33, April, June–Sept., 1907, p. 49–58, 381–394, 583–596, 736–741, 931–941; v. 34, Oct., 1907, p. 250–260.) **VDA**

Presentation of methods that have met with commercial success.

175. Diemer, Hugo. Executive control in the factory. (Factory, Chicago. v. 1, Dec., 1907, p. 73, 90–91.) † **TMA**

176. —— System in control of production. (Factory, Chicago. v. 1, Nov., 1907, p. 13–15, 43.) † **TMA**

177. Emerson, Harrington. The methods of exact measurement applied to individual and shop efficiency at the Topeka shops of the Santa Fe. (American engineer and railway journal, New York. v. 81, June, 1907, p. 221–224.) **TPB**

178. Gantt, Henry Laurence. The utilization of labor. (Stevens indicator, Hoboken, N. J. v. 24, Jan., 1907, p. 12–26.) **VDA**

A study of the economical utilization of labor.

179. Hastings, Clive. The efficiency of the worker and his rate of pay. (American engineer and railway journal, New York. v. 81, June, 1907, p. 238–241.) **TPB**

180. Hawkes, A. Intensified production. (Mechanical engineer, New York. v. 20, Dec. 7, 1907, p. 816–818.) †† **VFA**

Discusses the practical use of factory accounts.

181. Jacobs, H. W. The square deal to the railroad employee. (Engineering magazine, New York. v. 33, June, 1907, p. 328–352.) **VDA**

182. Knoeppel, Charles Edward. Cost reduction through cost comparison. (Engineering magazine, New York. v. 32, March, 1907, p. 918–928; v. 33, April–May, 1907, p. 72–82, 239–250.) **VDA**

183. Kuhlman, F. J. Raising the efficiency of men. (Factory, Chicago. v. 1, Nov., 1907, p. 15.) † **TMA**

184. McCarter, W. W. Machine-shop ideals in foundry operation. (Engineering magazine, New York. v. 32, Feb., 1907, p. 741–747.) **VDA**

185. Perrigo, Oscar E. The drafting room, its location and work. (Iron trade review, Cleveland. v. 41, Oct. 3, 1907, p. 545–547.) 3 – †† **VHA**

186. —— Shop management and cost keeping. (Foundry, Cleveland, v. 31, Nov., 1907, p. 121–123; Iron trade review, Cleveland, v. 41, Nov. 7, 1907, p. 747–750, Dec. 5, 1907, p. 922–926; v. 42, Jan. 2, 1908, p. 79–82, Feb. 6, p. 292–301, March 5, p. 460–463, April 2, p. 641–644, May 7, p. 852–857, June 4, p. 1039–1044; v. 43, July 2, p. 32–36, Aug. 13, p. 280–283, Sept. 3, p. 410–413, Oct. 1, p. 561–568.) 3 – †† **VHA**

Foundry is located in *VIA*.

187. Redding, C. J. A system for obtaining foundry costs. (Engineering magazine, New York. v. 32, Jan., 1907, p. 579–598.) **VDA**

Discusses most important points in the management of the foundry as an organic part of the machine shop.

188. Smart, R. A. Notes on works management. (Purdue engineering review, Lafayette, Ind. no. 3, April, 1907, p. 35–42.) **Eng. Lib.**

Outlines the requisites of an industrial organization.

189. Taylor, Frederick Winslow. A comparison of university and industrial methods. (Stevens indicator, Hoboken, N. J. v. 24, Jan., 1907, p. 37–46.) **VDA**

1907, continued.

190. —— On the art of cutting metals. Baltimore: American Society of Mechanical Engineers [1907]. 248 p., 16 diagrs., 8 pl. 8°. (American Society of Mechanical Engineers. Proceedings. v. 28, no. 3.) **VND**

191. **Whittemore,** H. L. A graphical wall record for the production department. (Engineering magazine, New York. v. 33, Sept., 1907, p. 894–905.) **VDA**

The system explained offers many possibilities of advantage in its introduction into the factory.

192. —— A theory of stores operation for machine shops. (Engineering magazine, New York. v. 33, May, 1907, p. 225–238.) **VDA**

Ideas worked out in the management of the stock room of an electrical manufacturing company of international range and reputation.

193. **Wilt,** A. D., jr. The relation of inspection to money making shop managements. (Engineering magazine, New York. v. 32, Feb., 1907, p. 725–736.) **VDA**

Represents the principles and methods followed by the author in his actual work.

194. **Younger,** John. The organization of a jig and tool department. (Engineering, London. v. 84, Oct. 25, 1907, p. 567–568.) **VDA**

Describes a system adopted in a large motor factory in England.

1908

195. **Alvord,** Clinton. Experience with piece-work and premium plans. (American machinist, New York. v. 31, May 7, 1908, p. 715–717.) †† **VFA**

196. **Beggs,** John I. Maintenance of a plant. (Progressive age, New York. v. 26, 1908, p. 427–429.) **VOA**

197. **Bender,** Carl. Systems of wages and their influence on efficiency. (Engineering magazine, New York. v. 36, Dec., 1908, p. 498–510.) **VDA**

The graphic method of presentation and the definition afforded by comparison combine to show the nature, effect and limits of the best known wage systems.

198. **Burns,** W. Ways and means of producing work in the machine shop. (Engineering magazine, New York. v. 36, Dec., 1908, p. 435–439.) **VDA**

Directs a line of inquiry which might advantageously be followed by a careful owner or manager seeking the improvement of his plant.

199. **Cardullo,** Forest R. The payment of wages. (Iron trade review, Cleveland. v. 42, March 19, 1908, p. 535–538.) 3 – †† **VHA**

Discusses three systems in general use and sets forth advantage of an ideal system in which results rather than time spent are the bases of payments.

200. —— The payment of wages. (Iron trade review, Cleveland. v. 43, Aug. 20, 1908, p. 318–320.) 3 – †† **VHA**

A reply to Harrington Emerson's criticism.

201. **Carpenter,** Charles U. Profit making in shop and factory management. New York: The Engineering Magazine, 1908. 146 p. 8°. (Works management library.) **TM**

202. **Church,** Alexander Hamilton. The proper distribution of expense burden. New York: The Engineering Magazine, 1908. 116 p. 8°. (Works management library.) **TM**

203. **Daily,** Robert. Running a factory by schedule. (Factory, Chicago. v. 1, Nov., 1907 – April, 1908, p. 21–24, 75–77, 115–118, 164–165, 176–178, 205–206, 241, 245–247; v. 2, May/July, 1908, p. 15–18.) † **TMA**

Describes an actual organization.

204. **Darbishire,** James E. Repairs, renewals, deterioration and depreciation of workshop plant and machinery. With discussion. illus. (Institution of Mechanical Engineers. Proceedings, London. 1908, p. 797–886.) **VFA**

205. **Darlington,** P. J. The fundamental principles of works organization and management. (Engineering magazine, New York. v. 35, April, 1908, p. 57–67.) **VDA**

Object is to reduce some of the great problems of works management to their fundamental elements.

206. **Diemer,** Hugo. Executive control in the factory. (Factory, Chicago. v. 1, Dec., 1907, p. 73, 90–91, Jan., 1908, p. 120, 126–128, April, 1908, p. 237–239, 250–251.) † **TMA**

How executive control has been attained in certain factories and what results followed.

207. **Doughton,** John. An automatic follow-up system. (Foundry, Cleveland. v. 33, Dec., 1908, p. 171–173.) **VIA**

Shows how to keep records of orders in the foundry and to lay out work for the molders.

208. **Dryer,** W. Poole. Organization of the drafting room. (Factory, Chicago. v. 2, May / July, 1908, p. 13–14, Aug. / Oct., 1908, p. 78–79.) † **TMA**

Tells how the department is organized and a drawing traced and inspected. System suitable for a force of five hundred men.

209. **Emerson,** Harrington. Different plans of paying employees. (Iron age, New York. v. 82, Oct. 22, 1908, p. 1150.) **VDA**

States advantages and disadvantages of day, piece, and premium plans to employer and employees.

210. —— Efficiency as a basis for operation and wages. (Engineering magazine, New York. v. 35, July – Sept., 1908, p. 529–536, 661–672, 909–920; v. 36, Oct., 1908 – March, 1909, p. 33–42, 170–178, 336–346, 676–683, 815–824, 998–1002.) **VDA**

1908, continued.

211. —— Preventable wastes and losses on railroads. (Railway age gazette, New York. v. 45, June 5, 1908, p. 12–16.) **TPB**

212. —— The various plans for payment of wages. (Iron trade review, Cleveland. v. 43, July 23, 1908, p. 151–154.) **3 – †† VHA**

Discusses the system of diminishing and increasing premiums for purpose of increasing efficiency of employees.

213. **Evans,** G. I. A practical drawing office system. (American engineer and railroad journal, New York. v. 82, June, 1908, p. 201–206, Sept., 1908, p. 333–337.) **TPB**

A description of the system in use on the Canadian Pacific Railway.

214. **Evans,** Holden A. General instruction for machine-shop methods. (American machinist, New York. v. 31, April 16, 1908, p. 610–613, April 23, p. 645–649.) **†† VFA**

"The following of which develops connected reports and records of materials, labor and product and promotes efficiency."

215. **Gantt,** Henry Laurence. Training workmen in habits of industry and coöperation. (American Society of Mechanical Engineers. Transactions, New York. v. 30, 1908, p. 1037–1063.) **VFA**

Outlines a system, discussing application, obstacles, etc.

216. **Gilbreth,** Frank Bunker. Field system. New York: M. C. Clark Pub. Co., 1908. 194 p. illus. 16°. **TM**

217. **Jacobs,** H. W. Personalism in railroading, a study in the science of management. (Engineering magazine, New York. v. 35, June, 1908, p. 404–411.) **VDA**

218. **Kenyon,** R. W. Securing the cooperation of the workman in the improvement of workshop methods, etc. (Iron and coal trades review, London. v. 77, Sept. 18, 1908, p. 1150–1151.) **3 – †† VIA**

Abstract of paper read before the British Foundrymen's Association. Outlines scheme in operation at Accrington.

219. **Knoeppel,** Charles Edward. Maximum production through organization and supervision. (Engineering magazine, New York. v. 35, April–July, 1908, p. 82–91, 227–238, 387–403, 537–544.) **VDA**

Develops the possibilities of a manufacturing business so that it may be operated at a minimum of friction and a maximum of productiveness.

220. —— Systematic foundry operation and foundry costing. (Engineering magazine, New York. v. 36, Oct., 1908–March, 1909, p. 89–97, 211–225, 457–468, 618–629, 765–776, 968–977.) **VDA**

Covers all elements entering into the problem of the systematic profitable conduct of the foundry.

221. **Lang,** Matthew. Organization of the personnel of an engineering works. (Mechanical world, London. v. 44, Oct. 2, 1908, p. 165, Oct. 16, 1908, p. 188–189.) **†† VFA**

222. **McFarland,** Walter M. The basic cause of increased efficiency. (Engineering magazine, New York. v. 36, Dec., 1908, p. 329–335.) **VDA**

Shows that increased efficiency is obtained through the stimulation of the personnel by a system of individual reward.

223. **Neuhaus,** F. A. Einzelfragen aus der Organization technischer Betriebe. (Verein deutscher Ingenieure. Zeitschrift, Berlin. Bd. 52, July 18, 1908, p. 1141–1145.) **VDA**

Discusses the keeping of records, cost accounting, etc.

224. **Nuckols,** J. Cecil. A complete system for the purchasing department. (Engineering magazine, New York. v. 35, April, 1908, p. 26–32.) **VDA**

225. **Niederer,** John George. A superintendent's views of American shop and labor conditions. (Engineering magazine, New York. v. 35, Sept., 1908, p. 906–908.) **VDA**

226. **Perrigo,** Oscar E. Theory and practice of shop and factory management. (Iron trade review, Cleveland. v. 42, Jan. 2, 1908, p. 79–82.) **3 – †† VHA**

227. **Pond,** Charles M. Shop order tracing system. (Machinery, New York. v. 14, June, 1908, p. 692–694.) **†† VFA**

A system of interest to the manufacturer of tools, instruments, fixtures, etc.

228. **Redding,** C. J. A simple system of recording costs. (Engineering magazine, New York. v. 34, Feb., 1908, p. 781–792.) **VDA**

Outlines a system that has proved successful in an English works employing three thousand men.

229. **Redtmann,** C. Die Generalstückliste. (Zeitschrift für Werkzeugmaschinen und Werkzeuge, Berlin. Jahrg. 12, Feb. 5, 1908, p. 179–180.) **VFA**

Illustrates and describes a shop-order form, explaining the importance of the system.

230. **Reed,** F. D. Detailed store department organization. (Railway age, Chicago. v. 45, May 29, 1908, p. 773.) **†† TPB**

231. The **Regeneration** of the old shop. (American machinist, New York. v. 31, March 5, 1908, p. 335–338.) **†† VFA**

An illustrated article describing the abandonment of old methods and the specialization in the manufacture of wood-working machinery.

232. **Robertson,** W. H. A. Staff organization in large manufacturing plants. (Iron and coal trades review, London. v. 77, Nov. 6, 1908, p. 2000.) **3 – †† VIA**

Points out inefficiencies due to indefiniteness of authority and the overlapping of duties.

1908, continued.

233. Routing work through the shop. (Iron trade review, Cleveland. v. 42, Feb. 27, 1908, p. 413–415.) 3–†† VHA

Describes system and forms used by the R. K. Le Blond Machine Tool Co.

234. Stilson, Clarence H. Manufacturing from stock. (Engineering magazine, New York. v. 35, Sept., 1908, p. 868–872.) VDA

Sets forth certain principles and methods which will do much to reduce idle and barren investment.

235. Stratton, George F. The management of production in a great factory. (Engineering magazine, New York. v. 34, Jan., 1908, p. 569–576.) VDA

Discusses the division of responsibility and authority in the General Electric Co.'s shop.

236. Taylor, Alexander. Effective machine-shop organization. (American machinist, New York. v. 31, March 19, 1908, p. 411–412.) †† VFA

States methods used by Westinghouse Electrical and Manufacturing Co. for fixing responsibility.

237. Thomas, Eustace. The management of engineering workshops. (Electrical engineer, London. new series, v. 41, April 24, 1908, p. 582–586.) †† VGA

Gives examples of modern management.

Also in *Iron and coal trades review,* London, v. 76, April 24, 1908, p. 1590–1591, 3 – †† *VIA,* and the *Journal of the Institution of Electrical Engineers,* London, v. 41, 1908, p. 741–758, *VGA.*

238. Van Deventer, John H. Mapping out factory routine. (Factory, Chicago. v. 2, Aug. / Oct., 1908, p. 69–72, 83–84.) † TMA

Describes how to lay out graphically the paths of production, how to analyze these diagrams so that the functions of ordering, routing, tracing and costing can be planned logically.

239. Webner, F. E. Obtaining actual knowledge of the cost of production. (Engineering magazine, New York. v. 35, May – July, Sept., 1908, p. 251–256, 345–348, 591–594, 837–842; v. 36, Oct., 1908, p. 76–80.) VDA

Treats of when a close knowledge of costs is needed, comparison of costs and the profitable use thereof, the use and abuse of mechanical aids, cost records, etc.

240. Wharton, H. M. The production system of the Westinghouse Electric and Manufacturing Co. (Engineering magazine, New York. v. 34, March, 1908, p. 891–900.) VDA

Describes methods used by the departments directly interested in creating the product, outlining only the general method of procedure.

241. Working of the premium system on the Santa Fe. (Railway age gazette, New York. v. 45, July 31, 1908, p. 413–414.) TPB

1909

242. Adams, C. Willis. **Planning** w ahead to save time. (Factory, **Chicago.** 2, Feb. / April, 1909, p. 141–143.) † TM

Tells how superintendent plans work, takes a detail from foreman and routes work.

243. Barth, Carl George. **The transm** sion of power by leather belting. (Ame can Society of Mechanical **Engineer** Transactions, New York. v. 31, 1909. 29 – 103.) VF

244. Bonus system on Santa Fe. (Rail way age gazette, New York. v. 47, De 19, 1909, p. 1192–1193.) TPI

An editorial.

245. Claydon, Victor R. The distributio of foundry tonnage burdens. (Engineering magazine, New York. v. 37, Sept., 1909. p. 978–980.) VDA

246. Day, Charles. Machine-tool practice for maximum production. (Engineering magazine, New York. v. 37, Aug., 1909, p. 725–743.) VDA

Considers matters bearing more specifically upon the design, construction, and operation of machine tools.

247. —— The planning and building of industrial plants. (Engineering magazine. New York. v. 37, Sept., 1909, p. 889–899; v. 38, Oct. – Dec., 1909, p. 70–82, 226–240, 405–420.) VDA

248. Emerson, Harrington. Efficiency as a basis for operation and wages. New York: The Engineering Magazine, 1909. 171 p. 12°. (Works management library.) TM

A strikingly written exhortation to "efficiency," stimulating and most useful when it leads the reader to a serious study of the authorities on the subject, such as Taylor and Gantt.

249. Gilbreth, Frank Bunker. Bricklaying system. New York: M. C. Clark Pub. Co., 1909. xi, 321 p. 8°. VEO

250. Gillette, Halbert Powers, and R. T. DANA. Cost keeping and management engineering; a treatise for engineers, contractors and superintendents engaged in the management of engineering construction. New York: The Myron C. Clark Publishing Co., 1909. xiv, 346 p. illus. 8°. TM

251. Going, Charles Buxton. Methods of the Santa Fe. (Engineering magazine, New York. v. 37, April – July, 1909, p. 9–36, 225–248, 337–360, 541–564.) VDA

Efficiency in the manufacture of transportation.

252. Halsey, F. A. From piece work to the premium plan. (American machinist, New York. v. 32, March 25, 1909, p. 464.) †† VFA

The incentive under one-third the saving being sufficient in nearly all cases to bring increased output.

1909, continued.

253. Hart, Joseph H. The uses of mechanical refrigeration in metallurgical practice. (Engineering magazine, New York. v. 36, Feb., 1909, p. 777–780.) **VDA**

254. Herlan, Frederick C. A simple but effective system in manufacturing enterprises. (Industrial engineering, Pittsburgh. v. 1, July 15, 1909, p. 377–384.) **VA**

Outlines a system adopted in an English factory.

255. Horsnaill, W. O. The organization of small engineering works. (Mechanical world, London. v. 45, Jan. 1, 1909, p. 5–6, Jan. 15, p. 26, Jan. 29, p. 50–51, Feb. 12, p. 74–75, Feb. 26, p. 98.) †† **VFA**

256. Jacobs, Henry William. Betterment briefs; a collection of published papers on organized industrial efficiency. New York: J. Wiley & Sons, 1909. 271 p. 2. ed. 8°. **TM**

Dealing with the Santa Fe machine shop improvements. Reviewed in *Railway age gazette,* v. 47, p. 1192.

257. Kissam, H. S. The principles of business management of an architect's practice. (School of mines quarterly, New York. v. 31, Nov., 1909, p. 45–54.) **OA**

A discussion of office systems and organization.

258. Kruttschnitt, Julius. The operating organization of the Union Pacific and Southern Pacific systems. (Railroad age gazette, New York. v. 46, May 28, 1909, p. 1113–1120.) †† **TPB**

259. Miller, W. M. S. Errors and difficulties in manufacturing costs. (Engineering magazine, New York. v. 36, Feb., 1909, p. 825–832.) **VDA**

Treats of the elements which go to make up the cost of manufacture.

260. Nicholson, Jerome Lee. Nicholson on factory organization and costs. New York: Kohl Publishing Co., 1909. xiii, 410 p. illus. 4°. **TM**

261. Perrigo, Oscar E. The importance of system in manufacturing enterprises. (Iron trade review, Cleveland. v. 45, Sept. 9, 1909, p. 457–463.) 3 – †† **VHA**

Shows the necessity of system, discusses conditions to be considered, and gives suggestions.

262. Pyeatt, J. S. Employment, training and advancement of men. (Railroad age gazette, New York. v. 46, March 5, 1909, p. 448.) †† **TPB**

263. Ram, Georges de. Quelques notes sur un essai d'application du système Taylor dans un grand atelier de mécanique français. (Revue de métallurgie, Paris. v. 6, Sept., 1909, p. 929–933.) *Eng. Lib.*

Brief note on the result.

264. Randolph, L. S. The principle of the time ticket. (Engineering magazine, New York. v. 37, May, 1909, p. 209–216.) **VDA**

265. Smith, Gershom. Distribution of indirect costs by the machine-hour method. (Engineering magazine, New York. v. 37, June, 1909, p. 384–394.) **VDA**

266. Sperry, T. A. Increasing production by the premium plan. (American machinist, New York. v. 32, Feb. 4, 1909, p. 174–175.) †† **VFA**

States that fairness, analyzed operations, accurate limits and ample bonuses based on character of work are essential to successful system.

267. —— The premium system in a large jobbing shop. (American machinist, New York. v. 32, Feb. 18, 1909, p. 266–270.) †† **VFA**

Describes a successful application that brought a great reduction in shop costs.

268. Stimpson, Herbert F. Graphical helps for apportioning time in constructive operations. (Engineering magazine, New York. v. 37, Sept., 1909, p. 955–959.) **VDA**

An argument for the necessity of using methods for apportioning time closely similar to those used in apportioning material.

269. Stradley, Edward M. Economy by centralized control. (Factory, Chicago. v. 2, Nov., 1908 / Jan., 1909, p. 105–108.) † **TMA**

Suggests two successful ways of centralizing factory control.

270. Sturgess, John. A simple cost system for complex situations. (Engineering magazine, New York. v. 36, March, 1909, p. 940–948.) **VDA**

271. Taylor, E. M. Modern methods and the business specialist. (Iron age, New York. v. 84, July 15, 1909, p. 184–186.) **VDA**

A new development of business practice.

272. Waterhouse, G. B. Economies in the manufacture of iron and steel. (Engineering magazine, New York. v. 37, May–June, 1909, p. 186–197, 361–372.) **VDA**

1910

273. Alden, C. L. How the foreman can promote shop efficiency. (Railway age gazette, New York. v. 49, July 1, 1910, p. 15–16.) †† **TPB**

Deals with proper treatment of employees.

274. Alexander, H. C. Organization by production factors. (Engineering magazine, New York. v. 38, Feb., 1910, p. 703–715.) **VDA**

Discusses how to avoid the uncertainties and errors of averaging and apportioning a general expense account.

275. Armer, J. C. Saving waste in manufacture. (Applied science, Toronto. v. 22, March, 1910, p. 226–230.) **VA**

Field of work in which the technical graduate might well look for a future.

1910, continued.

276. Baker, Benjamin. Boston's new department of public works under one engineering head. (Engineering news, New York. v. 64, Dec. 22, 1910, p. 689–690.) **VDA**

Concludes that functional organization is a failure.

277. Can the "principles of scientific management" be applied to railway operation? (Engineering news, New York. v. 64, Dec. 1, 1910, p. 600–601.) **VDA**

Abstract of the address by Mr. Louis D. Brandeis before the Interstate Commerce Commission.

278. Church, Alexander Hamilton. Organization by production factors. (Engineering magazine, New York. v. 38, Oct., 1909 – Jan., March, 1910, p. 15 – 26, 184–194, 361–370, 537–570, 863–875; v. 39, April, 1910, p. 77–88.) **VDA**

279. —— Production factors in cost accounting and works management. New York: The Engineering Magazine, 1910. 187 p. 8°. (Works management library.) **TM**

280. Claydon, Victor R. Time keeping and labor distribution in the foundry. (Engineering magazine, New York. v. 39, May – July, Sept., 1910, p. 221–229, 402–407, 549–554, 859–863.) **VDA**

Considers policy and methods of foundry management, handling stores and keeping down foundry expenses.

281. The **Comparative** merits of functional and geographical systems of organization. (Engineering news, New York. v. 64, Dec. 22, 1910, p. 692.) **VDA**

282. Cooke, Morris Llewellyn. Academic and industrial efficiency. New York [1910]. vi p., 2 l., (1)4–134 p. 4°. (Carnegie Foundation for the Advancement of Teaching. Bulletin. no. 5.) **SSA**

A highly interesting study of the efficiency of management of a number of well-known universities and colleges, as judged from the point of view of an industrial engineer.

283. Day, Charles. Metal working plants and their machine tool equipment. (Engineering magazine, New York. v. 39, June – July, Sept., 1910, p. 364–376, 535–548, 809–821.) **VDA**

Covers general classification and the characteristics of general metal manufacturing establishments.

284. —— The routing diagram as a basis for laying out industrial plants. (Engineering magazine, New York. v. 39, Sept., 1910, p. 809–821.) **VDA**

Calls attention to the advantages that can be derived from the use of the graphical routing diagram as a basis for the planning of industrial plants.

285. Diemer, Hugo. Factory organization and administration. New York: McGraw-Hill Book Company, 1910. x, 317 p. illus. 8°. **TM**

286. Do men like work? (Industrial engineering and engineering digest, New York. v. 8, Oct., 1910, p. 288–290.) **VA**

The view of a British member of parliament on the question of modern management.

287. Drury, C. J., and others. How the foreman can promote shop efficiency. (Railway age gazette, New York. v. 48, June 3, 1910, p. 1345–1348.) †† **TPB**

Articles submitted for a prize competition.

288. Efficiency of labor. (Industrial engineer and engineering digest, New York. v. 7, June, 1910, p. 463–464.) **VA**

An editorial.

289. Emerson, Harrington. Discipline and efficiency. (Scientific American supplement, New York. v. 70, Dec. 24, 1910, p. 415–416.) †† **VA**

Abstract of article published in *Engineering magazine.*

290. —— Some principles of efficiency. (Scientific American supplement, New York. v. 69, June 25, 1910, p. 403.) †† **VA**

Curing a sick industry.

291. —— The twelve principles of efficiency. (Engineering magazine, New York. v. 40, Oct., 1910 – March, 1911, p. 77–82, 161–174, 413–424, 496–506, 761–768, 943–950; v. 41, April – Sept., 1911, p. 27–32, 293–300, 441–447, 632–640, 810–818, 897–904.) **VDA**

292. —— The twelve principles of efficiency, and the organization which makes their application possible. (Engineering magazine, New York. v. 39, June – Sept., 1910, p. 321–330, 481–493, 679–691, 841–852.) **VDA**

293. Evans, Holden A. Distribution of indirect costs. (American machinist, New York. v. 33, Dec. 22, 1910, p. 1158–1161.) †† **VFA**

Indirect costs should be apportioned in such a way that each production order will receive charges which closely approximate to the proportional benefits it receives from the various elements of the indirect costs.

294. —— Effect of the Taylor system: what is to become of the mechanic? (American machinist, New York. v. 33, Dec. 15, 1910, p. 1095.) †† **VFA**

295. —— Orders, records, expense accounts. (American machinist, New York. v. 33, Dec. 29, 1910, p. 1192–1196.) †† **VFA**

In the system outlined a shipyard is selected because it contains many dissimilar shops.

296. —— The purposes of a cost system. (American machinist, New York. v. 33, Nov. 24, 1910, p. 955–957.) †† **VFA**

Are dividends being paid from profits or capital? Is every department of a plant a money maker? The purpose of a cost system is to answer such questions as these.

297. —— Scientific factory management. (American machinist, New York. v. 33, June 16, 1910, p. 1108–1111.) †† **VFA**

Explains aims of scientific management.

1910, continued.

298. —— The various elements of cost. (American machinist, New York. v. 33, Dec. 8, 1910, p. 1050–1054.) †† VFA

The importance of accuracy in obtaining the direct labor charges and direct material charges cannot be overemphasized.

299. **Falconer,** Kenneth. What more than wages? (Engineering magazine, New York. v. 38, March, 1910, p. 833–840.) VDA

Pursues no preconceived line, but undertakes a frank discovery of actual conditions in the mental attitude of the men as well as the employers.

300. **Gantt,** Henry Laurence. The compensation of workmen. (Engineering magazine, New York. v. 38, Feb.–March, 1910, p. 653–662, 813–823; v. 39, April–June, 1910, p. 17–23, 161–175, 331–340.) VDA

Discusses the bonus system and illustrates its application.

301. —— "Hipped" on motion study. (Industrial engineering. v. 8, Oct., 1910, p. 307–308.) VA

A letter.

302. —— The mechanical engineer and the textile industry. (American Society of Mechanical Engineers. Transactions, New York. v. 32, 1910, p. 499–506.) VFA

303. **Gilbreth,** Frank Bunker. The economic value of motion study in standardizing the trades. (Industrial engineering and engineering digest, New York. v. 8, July–Aug., 1910, p. 1–6, 102–106.) VA

Parts 1–3 of this article are not in the Library.

304. **Hines,** W. D. "Scientific management" for railways. (Nation, New York. v. 91, Dec. 15, 1910, p. 576.) * DA

A letter.

305. **How** a foreman can promote shop efficiency. (Railway age gazette, New York. v. 49, Sept. 2, 1910, p. 413–417.) †† TPB

Deals principally with handling locomotives at terminals, the value of harmony among workers and the need of up-to-date methods.

306. **Jackson,** D. C. Criticism of the engineering schools. (Stevens indicator, Hoboken, N. J. v. 27, Jan., 1910, p. 25–36.) VDA

307. **Kellogg,** Paul U. A national hearing for scientific management. (Survey, New York. v. 25, Dec. 3, 1910, p. 409–412.) SHK

308. **Knowlton,** Howard S. Labor costs in the central station. (Engineering magazine, New York. v. 37, Sept., 1909, p. 948–954; v. 38, Jan.–Feb., 1910, p. 571–579, 740–744.) VDA

Analyzes the working results of nine characteristic plants and traces the influences affecting the economy of central-station operation.

309. **Peck,** E. C. Works management and shop costs. (Foundry, Cleveland. v. 35, Feb., 1910, p. 258–262.) VIA

A discussion of plant organization to obtain highest efficiency at least cost.

310. **Percival,** F. Government specifications. (Engineering magazine, New York. v. 39, Sept., 1910, p. 853–858.) VDA

An example of neglect of three efficiency principles.

311. **Perrigo,** Oscar E. Machine-shop management. illus. (In: Cyclopedia of commerce, accountancy, and business administration. Chicago, 1910. 4°. v. 2, p. 193–249.) * R–TM

312. —— The management of a gear cutting shop. (Industrial engineering and engineering digest, New York. v. 8, Sept., 1910, p. 191–195.) VA

Example of a shop organized to do job gear cutting.

313. —— Rearranging machines for greater efficiency. (Industrial engineering and engineering digest, New York. v. 8, Nov., 1910, p. 384–389.) VA

Typical examples of where an increase of output followed a scientific study of the shop transportation problem.

314. **Perry,** E. The outsider and the busy business man. (Engineering magazine, New York. v. 40, Nov., 1910, p. 249–256.) VDA

Answering the objection that improvement should come from the inside and not from the outside expert.

315. **Porter,** H. F. J. Industrial betterment. (Cassier's magazine, New York. v. 38, Aug., 1910, p. 303–314.) VDA

Discusses modern methods of administration of workshops.

316. **Powell,** Paul R. Cost keeping in small factories. (Engineering magazine, New York. v. 40, Oct., 1910, p. 31–37.) VDA

317. **Reyer,** William G. How the foreman can promote shop efficiency. (Railway age gazette, New York. v. 48, May 6, 1910, p. 1140–1141.) †† TPB

318. **Roberts,** George H. How the foreman can promote shop efficiency. Railway age gazette, New York. v. 48, May 6, 1910, p. 1141–1142.) †† TPB

319. **Sanity** in naval organization. (Engineering magazine, New York. v. 38, Jan., 1910, p. 489–496.) VDA

Secretary Meyer's plans for the United States Navy Department.

320. **Scheduling** locomotive repair work on the Canadian Pacific Railway. (Industrial engineering and engineering digest, New York. v. 8, Nov., 1910, p. 380–383.) VA

A method of handling engines in the shop which made for economy and produced results.

1910, continued.

321. Scientific management as viewed from the workmen's standpoint. (Industrial engineering and engineering digest, New York. v. 8, Nov., 1910, p. 377–383.) **VA**

What the men thought of the methods used in the shop that increased its production by modern methods of handling men.

Reprinted in C. B. Thompson, *Scientific management*, p. 835–841, *TM*.

322. Sheafe, J. S. How the foreman can promote shop efficiency. (Railway age gazette, New York. v. 48, May 6, 1910, p. 1142–1143.) †† **TPB**

323. Shop efficiency and railroad rates. (American machinist, New York. v. 33, Dec. 15, 1910, p. 1097–1098.) †† **VFA**

Testimony before the railroad commission tufned to scientific shop management and emphasized the need of conserving both labor and time as well as natural resources.

324. Stimpson, H. F. Efficiency in shop operations. (Iron age, New York. v. 85, Jan. 6, 1910, p. 10–12.) †† **VDA**

Shows what efficiency is, how measured and developed, and results it will produce.

Also printed in *Scientific American supplement*, v. 69, Feb. 26, 1910, p. 130–137, †† *VA*.

325. Switzer, J. A. Smoke prevention and the efficiency of firemen: a concrete instance. (Engineering magazine, New York. v. 40, Oct., 1910, p. 83–85.) **VDA**

326. Taylor, Frederick Winslow. Why manufacturers dislike college graduates. (Sibley journal of engineering, Ithaca, New York. v. 24, Feb., 1910, p. 196–204.) **VDA**

327. Trask, H. Keith. The problem of the minor executive. (Engineering magazine, New York. v. 38, Jan., 1910, p. 497–502.) **VDA**

328. Waldron, Frederick A. Modern methods of shop management. (Iron age, New York. v. 85, April 28, 1910, p. 982–986.) **VDA**

Almost too brief to be useful. Details of a system taken from actual practice.

Also in *American machinist*, New York, v. 33, May 12, 1910, p. 871–875, †† *VFA*.

329. Webber, William O. A practical study of power costs. (Engineering magazine, New York. v. 39, May, Aug., 1910, p. 230–236, 729–738.) **VDA**

330. —— Reducing the costs of engine building by efficiency methods. (Engineering magazine, New York. v. 40, Oct., 1910, p. 86–90.) **VDA**

1911

331. Abbott, Ernest Hamlin. The passing of Humpty Dumpty. (Outlook, New York. v. 97, Jan. 7, 1911, p. 21–29.) * **DA**

The principles of scientific management and some of the benefits to the capitalist, laborer and the consumer which have actually been accomplished.

332. Abbott, Ernest Hamlin, and J. O. Fagan. Humpty Dumpty's question and its answer. (Outlook, New York. v. 97, March 11, 1911, p. 543–548.) * **DA**

Takes a critical attitude toward the subject of scientific management.

333. Adams, C. W. The differential piece rate. (American machinist, New York. v. 34, Jan. 5, 1911, p. 18–19.) †† **VFA**

The application of the differential piece rate to semi-automatic machines in a gear and chain wheel cutting department. On a job of 149 wheels the labor cost was reduced from $39.70 to $20.09.

334. Adamson, N. E., jr. The taking time study observations. (Industrial engineering and engineering digest, New York. v. 10, Dec., 1911, p. 439–443.) **VA**

335. Allison, Le Roy W. Scientific management in the railway shop. (Railway age gazette, New York. v. 51, July 7, 1911, p. 33–34.) †† **TPB**

336. Army officer on scientific management. (Industrial engineering and engineering digest, New York. v. 10, Dec., 1911, p. 448–452.) †† **VA**

Gen. Crozier's report of results with the Taylor system in the shops of the Watertown arsenal.

337. Aspects of scientific management. (Nation, New York. v. 92, May 11, 1911, p. 464–465.) * **DA**

An editorial.

338. Baker, Benjamin. Efficiency, freight rates and tariff revision. (American review of reviews, New York. v. 43, Jan., 1911, p. 80–83.) * **DA**

339. "The **Basic** principles underlying scientific management are correct." (Railway age gazette, New York. v. 50, Jan. 6, 1911, p. 18–19, Feb. 3, 1911, p. 210–211.) †† **TPB**

340. Bibliography of scientific management. (American Electric Railroad Accountants' Association. Proceedings, New York. 1911, p. 106–113.) **TPY**

References on efficiency and scientific management.

341. Bradlee, Henry G. A consideration of certain limitations of scientific efficiency. (In: Congress of Technology, Boston, 1911. Technology and industrial efficiency. New York, 1911. p. 190–199.) **VBA**

Also printed in *Stone & Webster's public service journal*, Boston, v. 8, May, 1911, p. 323–333, *VGA*.

1911, continued.

342. Brandeis, Louis Dembitz. The new conception of industrial efficiency. (Journal of accountancy, New York. v. 12, May, 1911, p. 35–43.) **TMA**

Replies to the address of James Duncan.

343. —— Organized labor and efficiency. (Survey, New York. v. 26, April 22, 1911, p. 148–151.) **SHK**

Address before the Boston Central Labor Union, April 2, 1911.

344. —— Scientific management. (Engineering magazine, New York. v. 40, Jan., 1911, p. 622–625.) **VDA**

Efficiency and economic management as an alternative to rate increases as a means of increasing the net earnings of American railroads.

345. —— Scientific management and railroads; being part of a brief submitted to the Interstate Commerce Commission. New York: The Engineering Magazine, 1911. 5 p.l., 92 p. 8°. **TPC**

Reviewed by E. D. Jones in the *American economic review*, v. 1, p. 833.

346. Brewer, C. B. Substitute for the rate increase. (Scientific American, New York. v. 104, June 17, 1911, p. 596–598.) †† **VA**

Economics of scientific management as applied to railroads.

347. Brombacher, M. H. C. Application of scientific management to a railway shop. (Railway age gazette, New York. v. 51, July 7, 1911, p. 23–26.) †† **TPB**

348. Brüll. Rapport présenté par M. Brüll sur l'ouvrage de M. J. Simonet, Étude sur l'organisation rationnelle des usines. (Société d'encouragement pour l'industrie nationale. Bulletin, Paris. année 110, tome 115, Jan., 1911, p. 16–24.) **VA**

349. Bunnell, Sterling H. Right principles in works management. (Iron age, New York. v. 87, May 4, 1911, p. 1084–1085.) †† **VDA**

Considers that machine operators reach their best efficiency when work is planned for them.

350. Burns, George J. Notable efficiencies in railroad machine-shop operation. (Engineering magazine, New York. v. 42, Nov. – Dec., 1911, p. 161–169, 386–392.) **VDA**

351. Calder, John. The problem of a typewriter works. (American machinist, New York. v. 35, Dec. 21, 1911, p. 1168–1170.) †† **VFA**

The complex manufacturing problem of the Remington typewriter works, and the scheme of organization that solves it.

Also in *Engineering news*, New York, v. 66, Nov. 9, 1911, p. 570–574, † *VDA*.

352. Canadian Pacific shop management. (American machinist, New York. v. 35, Dec. 21, 1911, p. 1164–1168.) †† **VFA**

353. Chase, Charles A. Principles of mine management. (Engineering and mining journal, New York. v. 92, Dec. 30, 1911, p. 1273–1277.) † **VHA**

Discusses the essentials of efficient management.

354. Church, Alexander Hamilton. Has scientific management science? (American machinist, New York. v. 35, July 20, 1911, p. 108–112.) †† **VFA**

Concludes that scientific management has nothing tangible behind it apart from certain useful mechanisms.

355. —— Intensive production and the foreman. (American machinist, New York. v. 34, May 4, 1911, p. 830–831.) †† **VFA**

"Shows that the shop foreman should not be a specialist but a man with a wide view of all conditions in his department."

356. —— The meaning of scientific management. (Engineering magazine, New York. v. 41, April, 1911, p. 97–101.) **VDA**

A definition of what scientific management really is.

357. Clark, Sue Ainslie, and Edith Wyatt. Making both ends meet; the income and outlay of New York working girls. New York: The Macmillan Co., 1911. xiii, 270 p., 4 pl., 1 table. 12°. **TDL**

Chapter 7, p. 223–270, Scientific management as applied to women's work.

Reprinted in C. B. Thompson, *Scientific management*, p. 807–834, *TM*.

Gives the results of an intensive investigation of the effect of the Taylor system on women employed under it.

358. Clausen, H. P. Speeding up production for establishing piece-work rates. (Engineering magazine, New York. v. 41, April, 1911, p. 63–68.) **VDA**

359. Cleveland, Frederick Albert. The application of scientific management to the activities of state and municipal government. (Engineering record, New York. v. 64, Dec. 2, 1911, p. 653–655.) † **VDA**

360. Coes, Harold V. The necessity of thorough preliminary work in industrial undertakings. (Engineering magazine, New York. v. 42, Oct., 1911, p. 47–52.) **VDA**

That the employment of industrial skill is as necessary as that of legal, etc.

361. Colvin, Fred H. Personality in shop management. (American machinist, New York. v. 35, Sept. 7, 1911, p. 439–440.) †† **VFA**

An account of methods and results at the Chicago plant of the Chicago & Northwestern Railway.

362. Commons, John Rogers. Organized labor's attitude towards industrial efficiency. (American economic review, Cambridge, Mass. v. 1, Sept., 1911, p. 463–472.) **TAA**

363. Cook, Allen M. Scientific management methods at a naval magazine. (Engineering magazine, New York. v. 42, Oct., 1911, p. 75–88.) **VDA**

1911, continued.

364. Crissey, F. E. The Taylor system again. (American machinist, New York. v. 34, June 22, 1911, p. 1182.) †† **VFA**

A letter in answer to the article "The machinist's side of Taylorism."

365. Cunningham, W. J. Scientific management in the operation of railroads. (Quarterly journal of economics, Cambridge, Mass. v. 25, May, 1911, p. 539–562.) **TAA**

Reprinted in C. B. Thompson, *Scientific management*, p. 580–599, *TM*. Abstract in *Freight*, v. 12, p. 137.

366. Dale, R. B. Efficiency in the drafting room. (American machinist, New York. v. 35, Dec. 7, 1911, p. 1089–1090.) †† **VFA**

Efficiency in the drawing room depends primarily not on motions but on men.

367. Dartmouth College. — Amos Tuck School of Administration and Finance. Addresses and discussions at the conference on scientific management held Oct. 12, 13, 14, 1911. Hanover, N. H.: Amos Tuck School, 1912. xi, 388 p. illus. 8°. **TM**

368. Day, Charles. Industrial plants; their arrangement and construction. New York: The Engineering Magazine, 1911. 294 p., 1 plan, 1 pl. illus. 12°. (Works management library.) **TM**

An illustration of the application of some of the principles of scientific management to the design and construction of industrial plants.

369. —— Management principles and the consulting engineer. (Engineering magazine, New York. v. 41, April, 1911, p. 133–140.) **VDA**

Reprinted in C. B. Thompson, *Scientific management*, p. 205–216, *TM*.

"Demonstrates that whether in industrial operation, engineering construction, or public service work the same laws of scientific treatment apply."

370. —— Modern machine shops and industrial plants. (Engineering magazine, New York. v. 40, Feb., 1911, p. 729–744.) **VDA**

371. Diemer, Hugo. Shop system of Terracute Machine Co. (Iron age, New York. v. 88, July 13, 1911, p. 106–109.) †† **VDA**

Gives details of administration and operation of works at Bridgeton, N. J.

372. Dodge, James Mapes. The spirit in which scientific management should be approached. (In: Dartmouth College. — Amos Tuck School of Administration and Finance. Addresses and discussions at the conference on scientific management, Oct., 1911. Hanover, N. H., 1912. p. 142–152.) **TM**

Reprinted in C. B. Thompson, *Scientific management*, p. 286–295, *TM*. Abstract printed in *Industrial engineering and engineering digest*, v. 10, Nov., 1911, p. 350–354, *VA*.

Care must be taken to maintain the business of the establishment in all its details while changes are going on.

373. Drysdale, W. F. Shop transportation facilities. (Engineering magazine, New York. v. 41, July, 1911, p. 569–577.) **VDA**

374. Duchez, Louis. Scientific business management. What is it? What effect will it have on the revolutionary movement? (International socialist review, Chicago. v. 11, April, 1911. p. 628–631.) **SFA**

375. Duncan, James. Efficiency. (Journal of accountancy, New York. v. 12, May, 1911, p. 26–34.) **TMA**

A critical discussion opposing the aims of efficiency management.

376. Duncan, John Christie. The economic side of works management. [Philadelphia: D. Appleton & Co., 1911.] 2 p.l., 183–316 p. 12°. **TM**

377. Dunn, Samuel Orace. Efficient management. (Railway age gazette, New York. v. 51, Sept. 8, 1911, p. 476–477.) †† **TPB**

378. Dwight, F. H. The Taylor system as a machinist sees it. (American machinist, New York. v. 34, May 25, 1911, p. 989–990.) †† **VFA**

Insists that the bonus as applied at the Bethlehem Steel Works is but another method of driving.

379. Economy in railroad maintenance through scientific management. (Engineering record, New York. v. 64, Oct. 21, 1911, p. 465.) † **VDA**

380. Editorials. (Railway age gazette, New York. v. 50, Feb. 10, 1911, p. 265, March 3, 1911, p. 387.) **HTPB**

381. Educational or administrative efficiency. (Engineering magazine, New York. v. 40, Jan., 1911, p. 606.) **VDA**

An editorial comment.

382. Efficiency engineering. (Engineering record, New York. v. 64, Oct. 21, 1911, p. 466.) † **VDA**

383. Efficiency in government shops. (Iron age, New York. v. 88, Dec. 28, 1911, p. 1384–1385.) †† **VDA**

A letter.

384. Efficiency in municipal engineering. (Engineering record, New York. v. 64, Dec. 2, 1911, p. 639–640.) † **VDA**

385. Efficiency program. (Independent, New York. v. 70, April 6, 1911, p. 739–740.) * **DA**

An editorial.

Reprinted in C. B. Thompson, *Scientific management*, p. 205–216, *TM*.

386. Efficient management. (Railway age gazette, New York. v. 51, Nov. 3, 1911, p. 886–887, Dec. 1, p. 1103–1104.) †† **TPB**

An editorial.

1911, continued.

387. Elliott, Howard. Efficient railway management; extracts from an address before the "$100 an Acre Club," Valley City, N. D. n.p., 1911. 7(1) p. 8°.
TPC p.v.4, no.13

388. Emerson, Harrington. Efficiency. (System, New York. v. 19, Jan., 1911, p. 37–44.) **TMA**

What the term means as applied to business management.

389. —— Ethics and wages. (Outlook, New York. v. 99, Nov. 18, 1911, p. 682–683.) *** DA**

A letter.

390. —— The fundamental truth of scientific management. (Journal of accountancy, New York. v. 12, May, 1911, p. 17–25.) **TMA**

An interesting discussion of the proposed economies.

391. —— How railroad efficiency can be measured. (Engineering magazine, New York. v. 42, Oct., 1911, p. 10–16.) **VDA**

Shows that half the loss could be eliminated and that this gain is distributed to those who supply the railroad money.

392. —— Standards of efficiency in shop operation. (Iron age, New York. v. 87, Jan. 19, 1911, p. 204–206.) **†† VDA**

Discusses the element of justice in scientific management.

393. An **English** view of "motion study" as a means of increasing labor efficiency. (Engineering, London. v. 92, Sept. 15, p. 357–358.) **† VA**

Editorial.

Reprinted in *Engineering news,* New York, v. 66, Nov. 9, 1911, p. 552, † *VDA.*

394. Ennis, William Duane. An experiment in motion study. (Industrial engineering and engineering digest, New York. v. 9, June, 1911, p. 462–464.) **VA**

395. —— Works management. New York: McGraw-Hill Book Company, 1911. xii, 194 p. 8°. **TM**

396. Establishing an efficiency system. (Railway age gazette, New York. v. 51, Sept. 1, 1911, p. 413–414.) **†† TPB**

A communication.

397. Evans, Holden A. Cost keeping and scientific management. New York: McGraw-Hill Book Company, 1911. ix p., 1 l., 252 p. 8°. **TM**

A practical machine shop treatise, showing the author's methods as applied at the Mare Island Navy Yard. The book illustrates what may be done by way of approach to the Taylor system by a competent manager without the aid of experts.

398. —— Do Taylor's methods increase production? (American machinist, New York. v. 34, June 15, 1911, p. 1133–1134, June 29, 1911, p. 1202–1203.) **†† VFA**

"Records benefits derived from the Taylor system."

399. Fagan, J. O. The dream of scientific management on railroads. (Journal of accountancy, New York. v. 12, May, 1911, p. 1–16.) **TMA**

400. Felton, Samuel Morse. Scientific management of American railways. (In: Congress of Technology, Boston, 1911. Technology and industrial efficiency. New York, 1911. p. 221–266.) **VBA**

401. Ferguson, B. M. The application of the Taylor system of shop management to gas works. (Progressive age, New York. v. 29, Oct. 2, 1911, p. 830–833.) **VOA**

An account of the application of this system to the street department or the laying of mains and services.

Also in *American gas light journal,* New York, v. 95, Oct. 9, 1911, p. 225–228, *VOA.*

402. Flack, Alonzo. Machine-shop experience with the principle of efficiency reward. (Engineering magazine, New York. v. 41, July, 1911, p. 641.) **VDA**

403. The **Foreman's** place in scientific management. (Industrial engineering and engineering digest, New York. v. 9, March, 1911, p. 197–201.) **VA**

Reprinted in C. B. Thompson, *Scientific management,* p. 395–404, *TM.*

404. Foster, Herbert. Keeping track of goods in process. (Engineering magazine, New York. v. 42, Nov., 1911, p. 238–240.) **VDA**

405. Franklin, Benjamin Alvey. The argument of precedent and practicability. (Engineering magazine, New York. v. 42, Oct., 1911, p. 18–24.) **VDA**

406. —— An efficiency experiment station for the railroads. (Engineering magazine, New York. v. 42, Oct., 1911, p. 1–6.) **VDA**

407. —— Gang piece work. (Engineering magazine, New York. v. 41, June, 1911, p. 457–460.) **VDA**

408. —— Quality piece work. (Engineering magazine, New York. v. 41, May, 1911, p. 273–278.) **VDA**

409. French, Edward V. Prevention and control of fires through scientific methods. (Woodcraft, Cleveland. v. 15, May, 1911, p. 39–43.) **† VMA**

410. Fritch, L. C. Opportunities for economy on railways. (Railway age gazette, New York. v. 51, Nov. 24, 1911, p. 1059–1061.) **†† TPB**

411. Gantt, Henry Laurence. The basis of proper management. (American machinist, New York. v. 35, Nov. 2, 1911, p. 841–842.) **†† VFA**

The basis of proper management is task work. But the problem of establishing an order and increasing the general shop efficiency should be first solved. Then take up the efficiency of the individual.

1911, continued.

412. —— A practical application of scientific management. (Engineering magazine, New York. v. 41, April, 1911, p. 1–22.) VDA

413. —— The problem of industrial efficiency. (Industrial engineering and engineering digest, New York. v. 9, March, 1911, p. 179–183.) VA

The solution, in which equity is the greatest factor.

414. —— The straight line to profit. (System, New York. v. 19, Feb., 1911, p. 115–124.) TMA

To find and put in practice the one right way of getting maximum results which is the only straight line to profits, five steps are necessary.

415. —— The task and the bonus system. (American machinist, New York. v. 35, Nov. 16, 1911, p. 920–921.) †† VFA

A system of education with prizes for those who learn.

416. —— The task and a day's work. (Dartmouth College. — Amos Tuck School of Administration and Finance. Addresses and discussions at the conference on scientific management, 1911. Hanover, N. H., 1912. p. 60–83.) TM

Also printed in *Industrial engineering and engineering digest*, New York, v. 10, Nov., 1911, p. 363–368, †† *VA*.

417. —— Task work — the basis of proper management. (Machinery, New York. v. 18, Dec., 1911, p. 279–282.) †† VFA

Abstract of paper read before the National Machine Tool Builders' Association, Oct., 1911.

418. —— Work, wages, and profits. New York: The Engineering Magazine, 1911. 194 p., 3 charts. 12°. (Works management library.) TM

Reviewed by C. W. Mixter in the *American economic review*, v. 1, p. 103.

419. **Genesis** of railway brotherhoods. (Railway age gazette, New York. v. 50, March 31, 1911, p. 782.) †† TPB

A letter showing how the railroads have neglected the human factor in their management.

420. **Gilbreth,** Frank Bunker. Motion study; a method for increasing the efficiency of the workman. With an introduction by R. T. Kent. New York: D. Van Nostrand Company, 1911. xxiii, 116 p. illus. 8°. TM

The best description of motion study.

421. —— The theory of work. (Journal of accountancy, New York. v. 12, July, 1911, p. 195–200.) TMA

The theory in practice will increase wages and shorten hours. A reply in part to the paper by John Golden.

422. **Godfrey,** J. R. Eliminating the inefficient man. (American machinist, New York. v. 34, p. 1232.) †† VFA

Takes up the question of what is to become of the inefficient men.

423. **Going,** Charles Buxton. Principles of industrial engineering. New York: McGraw Hill Book Company, 1911. x p., 1 l., 174 p. 8°. TM

424. **Golden,** John. The attitude of organized labor. (Journal of accountancy, New York. v. 12, July, 1911, p. 189–194.) TMA

425. **Green,** Arthur B. Scientific management. (Harvard engineering journal, Cambridge, Mass. v. 10, Nov., 1911, p. 119–128.) VDA

426. **Harahan,** William Johnson. Scientific management. (Railway age gazette, New York. v. 50, Feb. 3, 1911, p. 212.) †† TPB

A letter.

427. **Harding,** H. McL. An engineering solution of freight-handling problems. (Engineering magazine, New York. v. 41, April, 1911, p. 33–48.) VDA

428. **Hathaway,** H. K. Prerequisites to the introduction of scientific management. (Engineering magazine, New York. v. 41, April, 1911, p. 141–146.) VDA

Reprinted in C. B. Thompson, *Scientific management*, p. 270–278, *TM*.

429. **Herschel,** W. H. Social philosophy and the Taylor system. (Engineering news, New York. v. 65, May 11, 1911, p. 577–578.) VDA

Will the ultimate result of the Taylor system be beneficial?

430. **Hinckley,** Benjamin S. The scientific thought applied to railroad problems. (In: Congress of Technology, Boston, 1911. Technology and industrial efficiency. New York, 1911. p. 181–185.) VBA

431. **Hoadley,** George A. Efficiency in education. (Journal of Franklin Institute, Philadelphia. v. 174, Aug., 1912, p. 219–223.) VA

432. **Holmes,** U. T. Naval personnel and its development: a plea for unity with specialization. (Engineering magazine, New York. v. 42, Dec., 1911, p. 321–330.) VDA

433. **Horowitz,** Louis Jay. The modern building organization... One of a series of lectures especially prepared for the Alexander Hamilton Institute. New York: Alexander Hamilton Institute, cop. 1911. 41 p. 8°. TM p.v.6, no.10

434. **Hornaill,** W. O. A simple system for jobbing and repair shops. (Engineering magazine, New York. v. 40, March, 1911, p. 868–880.) VDA

435. **How** scientific management is applied. Chicago: A. W. Shaw Co. [1911.] 128 p. illus. 12°. (Students' business book series.) TM

1911, continued.

436. How the trusts fail in securing efficiency. (Engineering news, New York. v. 66, Oct. 19, 1911, p. 474.) † **VDA**

437. Hudson, F. C. The machinist's side of Taylorism. (American machinist, New York. v. 34, April 27, 1911, p. 773.) †† **VFA**

"A claim that cutting out responsibility removes ambition and co-operation and is not economical in the long run."

438. Hutchins, F. Lincoln. A letter criticising the writers on the "mistakes of the efficiency men." (Railway age gazette, New York. v. 50, Feb. 10, 1911, p. 268–269.) †† **TPB**

Reprinted in C. B. Thompson, *Scientific management*, p. 632–635, *TM*.

439. Increasing the efficiency of a municipal public-works organization. A system whereby the bureau of sewers of Manhattan borough, New York, has been able to clean twice as many catch-basins with half as many men as formerly. (Engineering record, New York. v. 64, Dec. 9, 1911, p. 675–677.) † **VDA**

440. Installation of scientific management. (Industrial engineering and engineering digest, New York. v. 10, Nov., 1911, p. 391–392.) †† **VA**

441. Jackell, J. A. Large deficit turned to a larger profit. (Canadian electrical news, Toronto. v. 21, Sept., 1911, p. 59–60.) †† **VGA**

Gives results of proper accounting and efficient management at Coventry, England.

442. Jacobson, Ferd. B. A time study of piece work system. (American machinist, New York. v. 34, April 6, 1911, p. 631–632.) †† **VFA**

Discusses the instruments and methods of accurate time study.

443. James, B. Promoting efficiency through the foreman. (Railway age gazette, New York. v. 51, Aug. 18, 1911, p. 343–344.) †† **TPB**

444. Johnson, James R. A manager's view of the Taylor system. (American machinist, New York. v. 34, May 11, 1911, p. 885–886.) †† **VFA**

"Presenting the point of view of the typical successful manager, that we should let well enough alone."

445. Jones, H. P. Do Taylor's methods increase production? (American machinist, New York. v. 35, July 27, 1911, p. 175.) †† **VFA**

Attempts to prove that Taylor system is not responsible for increased production.

446. Kendall, Henry P. Unsystematized, systematized and scientific management. (In: Dartmouth College. — Amos Tuck School of Administration and Finance. Addresses and discussions at a conference on scientific management, 1911. Hanover, N. H., 1912. p. 112–141.) **TM**

Reprinted in C. B. Thompson, *Scientific management*, p. 103–131, *TM*.

Abstract in *Industrial engineering and engineering digest*, New York, v. 10, Nov., 1911, p. 374–380, *VA*.

447. Kent, Robert Thurston. The tool room under scientific management. (Industrial engineering, New York. v. 9, Feb., 1911, p. 87–100.) **VA**

Describes the Taylor method of administering a tool room. Illustrated.

Reprinted in C. B. Thompson, *Scientific management*, p. 434–451, *TM*.

448. Kimball, Dexter Simpson. Another side of efficiency engineering. (American machinist, New York. v. 35, Aug. 10, 1911, p. 263–265.) †† **VFA**

Developing briefly some of the social and economic implications of the movement and calling attention to the absence of a discussion of distribution.

Reprinted in C. B. Thompson, *Scientific management*, p. 734–740, *TM*.

449. Klyce, E. D. K. Scientific management and the moral law. (Outlook, New York. v. 99, Nov. 18, 1911, p. 659–663.) * **DA**

Points out the absolute necessity of mutual helpfulness and co-operation in the Taylor system.

450. Knoeppel, Charles Edward. The efficiency movement in the foundry. Scientific management for casting shops with a discussion of the applications and economies of the system. (Industrial engineering and engineering digest, New York. v. 10, July, 1911, p. 27–31.) †† **VA**

Also printed in *Foundry*, Cleveland, v. 40, Feb., 1912, p. 47–50, *VIA*.

451. —— Maximum production in machine shop and foundry. New York: The Engineering Magazine, 1911. 1 p.l., vi, 365(1) p. 12°. (Works management library.) **TM**

Reprinted from the *Engineering magazine*.

452. —— Systematic foundry operation and foundry costs. (Engineering magazine, New York. v. 40, Oct., 1910 – Feb., 1911, p. 56–63, 201–212, 393–405, 553–562, 745–756; v. 41, April – May, 1911, p. 49–62, 246–255.) **VDA**

453. Knowlton, Howard S. Industrial electric-power distribution. (Engineering magazine, New York. v. 42, Oct., 1911, p. 52–56.) **VDA**

454. Labor unions and the Taylor system. (Industrial engineering and engineering digest, New York. v. 9, June, 1911, p. 476.) **VA**

An editorial.

455. Larsen, Lauritz A. Scientific management... One of a series of lectures especially prepared for the Alexander Hamilton Institute. New York: Alexander Hamilton Institute, cop. 1911. 48 p. 8°. **TM p.v.6, no.11**

1911, continued.

456. Latent service of scientific management. (Iron age, New York. v. 88, Aug. 17, 1911, p. 348–349.) †† VDA

Editorial.

457. Leech, C. C. A letter on efficiency. (Railway age gazette, New York. v. 51, Aug. 4, 1911, p. 221.) †† TPB

458. Lewis, Wilfred. Efficiency methods of the Tabor Manufacturing Co. (Iron age, New York. v. 87, April 13, 1911, p. 902–903.) †† VDA

Reports results of the introduction of the Taylor system of scientific management.

459. —— F. W. Taylor and the steel mills. (American machinist, New York. v. 34, April 6, 1911, p. 655.) †† VFA

In defense of the Taylor system.

460. —— An object lesson in efficiency. (In: Congress of Technology, Boston, 1911. Technology and industrial efficiency. New York, 1911. p. 173–180.) VBA

Also printed in *Industrial efficiency and engineering digest,* New York, v. 9, May, 1911, p. 379–384, *VA; Mechanical engineer,* Manchester, May 19, 1911, p. 623–625, † *VFA,* and in C. B. Thompson, *Scientific management,* p. 232–239, *TM.*

461. —— Running work by the new rules. (Factory, Chicago. v. 7, Sept., 1911, p. 148–149.) † TMA

Scientific management at the Tabor Manufacturing Co.

462. Lyon, Tracy. Scientific industrial operation. (In: Congress of Technology, Boston, 1911. Technology and industrial efficiency. New York, 1911. p. 200–203.) VBA

Also in *Iron age,* v. 87, p. 922, *VDA,* and in *Industrial world,* v. 45, p. 464, *VA.*

Explains what it has accomplished in some large manufacturing establishments.

463. McDaniel, A. B. A business office system of an engineering company. (Engineering record, New York. v. 64, Dec. 2, 1911, p. 649–650.) VDA

464. Maclaurin, Richard Cockburn. Educational and industrial efficiency. (Science, New York. new series, v. 33, Jan. 20, 1911, p. 101–103.) OA

A review of Carnegie Foundation bulletin no. 5, 1910.

465. Meredith, E. R. Maintenance of efficiency. (Railway age gazette, New York. v. 51, Aug. 18, 1911, p. 341–342.) †† TPB

466. Methods of management that made money. (Industrial engineering and engineering digest, New York. v. 9, Jan., 1911, p. 21–27.) VA

The system in use in the works of the Link-Belt Co.

467. Meyers, G. J. The science of management. (American Society of Naval Engineers. Journal, Washington. v. 23, Nov., 1911, p. 994–1015.) VXA

"An attempt to deduce and formulate 'laws' of management. Each law is followed by a brief statement of the reasons for it and the methods of its application."

468. Meyncke, George W. An efficient drawing-room system. (American machinist, New York. v. 35, Dec. 21, 1911, p. 1171–1173.) †† VFA

A group system of filing drawings devoid of card indexes and other commonly used methods.

469. Miles, George F. Not synonymous with Taylor system of scientific management. (Engineering news, New York. v. 65, May 25, 1911, p. 636.) † VDA

A letter.

470. The Mistakes of the efficiency men. (Railway age gazette, New York. v. 50, p. 29, 230–231, 391–392, 849–851, 1059–1061.) †† TPB

471. Mitchell, John. Efficiency not acceptable to the wage-earner. (National Civic Federation. Annual meeting, no. 11, 1911. New York, 1911. p. 113–117.) TDI

472. Moffett, Cleveland. Saving $1,000,000 a day for American consumers. (Hampton's magazine, New York. v. 26, March, 1911, p. 346–356.) * DA

473. Morrison, Charles J. Factors influencing railway operating efficiency. (Engineering magazine, New York. v. 42, Nov., 1911, p. 241–250.) VDA

474. —— Letter on scientific management. (Railway age gazette, New York. v. 50, Feb. 3, 1911, p. 213–214.) †† TPB

475. Motion study. (Engineering, London. v. 92, Sept. 15, 1911, p. 357–358.) VDA

A review of Mr. Gilbreth's book on motion study.

476. Myers, David M. The mechanical engineer and the factory power plant. (Engineering magazine, New York. v. 41, July, 1911, p. 617–626.) VDA

477. Orcutt, W. D. The conservation of human effort. (Harper's magazine, New York. v. 122, Feb., 1911, p. 432–437.) * DA

Through modern scientific management.

478. Organization, system and efficiency in manufacturing industries. (Engineering news, New York. v. 66, Nov. 9, 1911, p. 566–567.) † VDA

479. Osborne, W. Echoes from the oil country. (American machinist, New York. v. 34, June 1, 1911, p. 1036–1037.) †† VFA

A suggestive and humorous account of the way not to do it.

480. Ostwald, William. Efficiency. (Independent, New York. v. 71, part 2, Oct. 19, 1911, p. 867–871.) * DA

Gives in brief space the essence of the philosophy of one of the foremost men of science.

481. Page, A. W. What is scientific management? (World's work, Garden City, N. Y. v. 21, Feb., 1911, p. 14045–14050.) * DA

Frederick W. Taylor's work.

1911, continued.

482. Parkhurst, Frederick Augustus. Applied methods of scientific management. (Industrial engineering and engineering digest, New York. v. 9, April–June, 1911, p. 263–269, 351–363, 437–450; v. 10, July–Dec., 1911, p. 1–16, 92–104, 161–176, 249–262, 337–345, 425–433.) **VA**

An account of the organization of the Ferracute Machine Co., a plant operating under scientific management.

483. Parry, Addison J. The efficiency of scientific management. (Yale scientific monthly, New Haven. v. 18, Dec., 1911, p. 144–148.) **OA**

484. Peck, E. C. Systematic versus scientific management. (Iron age, New York. v. 88, Aug. 17, 1911, p. 364–365.) † **VDA**

Cautions against precipitate introduction of radical shop-working measures.

485. Philbrick, H. S. Scientific management. (World to-day, New York. v. 21, Oct., 1911, p. 1167–1170.) * **DA**

"Developing the idea that scientific management is a resumption of the direct oversight over production which had gradually vanished."

486. Polakov, Walter U. Power-plant betterment by scientific management. (Engineering magazine, New York. v. 41, April–Sept., 1911, p. 102–112, 278–292, 448–456, 577–582, 796–809, 970–975.) **VDA**

487. Porter, H. P. Observations on scientific management. (Printing art, New York. v. 18, Sept., 1911, p. 17–20.) †† * **IPA**

488. Porter, John Jerman. Efficiency methods in cupola operation. (Engineering magazine, New York. v. 41, Sept., 1911, p. 905–912.) **VDA**

489. Railroad efficiency and the labor unions. An irreconcilable conflict between scientific management and the closed shop. (Iron age, New York. v. 87, Feb. 23, 1911, p. 476–478, 724–725.) **VDA**

490. The **Railway** library. 1910. (Second series.) A collection of noteworthy addresses and papers mostly delivered or published during the year named. Compiled and edited by Slason Thompson. Chicago: The Gunthorp-Warren Printing Co., 1911. 3 p.l., 5–456 p. 8°. **TPCM**

491. The **Railways** and scientific management. (Engineering and contracting, New York. v. 35, April 5, 1911, p. 379–380.) **VDA**

Reprinted in C. B. Thompson, *Scientific management*, p. 610–631.

Points out that scientific management is now being applied to the railroads.

492. Rand, Waldron H. Bonus — profit-sharing — pensions. (Journal of accountancy, New York. v. 12, Nov., 1911, p. 493–504.) **TMA**

Description of various schemes of profit-sharing and pensions of business enterprises with which the author has been in touch.

493. Redtmann, C. Moderne Organisation im Fabrikbetriebe. (Zeitschrift für Werkzeugmaschinen und Werkzeuge, Berlin. Jahrg. 15, Oct. 5, 1910, p. 9–11.) **VFA**

A discussion of German practice in works management.

494. Reed, H. W. Following a fixed schedule under the Taylor system. (American machinist, New York. v. 35, Nov. 30, 1911, p. 1020–1021.) †† **VFA**

The fixed schedule, under the guise of an instruction card, insures a fair deal to all.

495. —— A time study under the Taylor system. (American machinist, New York. v. 35, Oct. 12, 1911, p. 688–689.) †† **VFA**

The best descriptions of elementary time study as practiced by the Taylor group of engineers.

496. Revol, G. Influence des causes psychologiques dans la direction des usines. (Revue de métallurgie, Paris. v. 8, Oct., 1911, p. 791–801.) **Eng. Lib.**

Individual, local and exterior causes as aiding or hindering the organization.

497. Richards, W. H. Coming efficiency in water works management. (New England Water Works Association. Journal, Boston. v. 25, Dec., 1911, p. 407–421.) **VDL**

498. Ripley, Edward Payson, and others. A symposium of comment on the proposed efficiency experiment station. (Engineering magazine, New York. v. 42, Oct., 1911, p. 6–17.) **VDA**

499. Rizer, F. W. How the road-master can promote efficiency. (Railway age gazette, New York. v. 51, Aug. 18, 1911, p. 342–343.) †† **TPB**

500. Rorty, M. C. Organization and discipline. (Wisconsin engineer, Madison. v. 15, Feb., 1911, p. 197–207.) **VDA**

Outlines the general principles of organization and discipline and considers methods of handling men.

501. Sacedote, Guido. Collecting data to compute costs. (American machinist, New York. v. 35, Nov. 9, 1911, p. 870–874.) †† **VFA**

The forms, indexes and methods used to collect data for determining costs in an Italian machine shop.

502. Schroeder, Albert G. A purchasing system for a gas company. (American gas light journal, New York. v. 95, Oct. 9, 1911, p. 228–231.) † **VOA**

503. Scientific management. (Engineering news, New York. v. 65, March 23, 1911, p. 358–359.) † **VDA**

Editorial on the sensational developments in connection with this movement and the tendency toward extravagant statements.

504. Scientific management. (Outlook, New York. v. 98, May 13, 1911, p. 46–47.) * **DA**

An editorial.

505. Scientific management. (Railway age gazette, New York. v. 50, p. 18–19, 210–211, 265–266, 307, 344–348, 388–389, 835–836; v. 51, p. 19–20, 50, 889, 1106.) †† **TPB**

Editorials.

1911, continued.

506. Scientific management. — Can it be applied to the printing industry? (Printing art, New York. v. 17, May, 1911, p. 223–226.) †† * **IPA**

An editorial.

507. Scientific management and the labor unions. (World's work, Garden City, N. Y. v. 22, May, 1911, p. 14311–14312.) * **DA**

An editorial.

508. Scientific management and the limitation of output. (Industrial engineering and engineering digest, New York. v. 10, Sept., 1911, p. 204–205.) **VA**

An editorial.

509. Scientific management at the United States arsenals. Results accomplished at Watertown. (Iron age, New York. v. 88, Nov. 9, 1911, p. 1022–1024.) **VDA**

510. Scott, Walter Dill. Increasing human efficiency in business; a contribution to the psychology of business. New York: The Macmillan Company, 1911. v, 339 p. 8°. **TM**

511. —— The rate of improvement in efficiency. (System, Chicago. v. 20, Aug., 1911, p. 155–162.) **TMA**

Presents a useful sidelight on its application.

512. Shaw, A. W. Scientific management in business. (American review of reviews, New York. v. 43, March, 1911, p. 327–332.) * **DA**

Describes work of the system at the Tabor Manufacturing Co., Philadelphia.

Reprinted in C. B. Thompson, *Scientific management*, p. 217–225, *TM*.

513. Slave driving or scientific management. (Industrial engineering and engineering digest, New York. v. 9, April, 1911, p. 309–310.) **VA**

514. Smith, Oberlin. Naming and symbolizing. (Engineering magazine, New York. v. 41, June, 1911, p. 461–470.) **VDA**

Considers the naming and symbolizing of the industrial elements as a prerequisite to the introduction of scientific management.

515. Stafford, A. Scientific management. (American machinist, New York. v. 34, April 6, 1911, p. 655–656.) †† **VFA**

516. Stilson, Clarence H. Letter on scientific management. (American machinist, New York. v. 35, July 27, 1911, p. 175–176.) †† **VFA**

In defense of scientific management.

517. Stimpson, Herbert F. Business administration as a constructive science. (Iron age, New York. v. 87, March 16, 1911, p. 662–663, March 23, p. 722–724.) †† **VDA**

Discusses the application of the science of administration to the control of mental and physical force, to organization, standards and records.

518. —— Efficiency in its relation to the consumer. (Cassier's magazine, New York. v. 40, Aug., 1911, p. 313–317.) **VDA**

Discusses the scientific basis of efficiency computation.

519–520. —— Works management as a constructive science. Operative methods well developed, but directive methods still lack much. The uses of standards and records. (Iron age, New York. v. 87, Jan. 26, 1911, p. 248–249.) **VDA**

Brief discussion of the essentials for attaining shop efficiency.

521. Stimpson, H. F., and others. Application of scientific management to a railway shop. (Railway age gazette, New York. v. 51, July 7, 1911, p. 38–41.) †† **TPB**

Discusses principles which should guide the application of scientific management to the railway shop.

522. Stratton, George F. Ca' Canny and speeding up. The new solution of two old problems. (Outlook, New York. v. 99, Sept. 16, 1911, p. 120–125.) * **DA**

523. Suffern, Ernest S. The man in the ranks. (Journal of accountancy, New York. v. 12, Dec., 1911, p. 565–572.) **TMA**

"How he benefits through scientific management."

524. Taking ambition out of the workman. (Century, New York. v. 82, July, 1911, p. 462–464.) * **DA**

525. Tanning production. "Scientific management" versus "Rule o' thumb." (Leather manufacturer, Boston. v. 22, June, 1911, p. 205–207.) **VMA**

526. Tardy, Walter B. A plea for standard organization of the engineer division aboard ship and for a uniform method of management of the engineer department, with a section devoted to the application of scientific management. (American Society of Naval Engineers. Journal, Washington. v. 23, Aug., 1911, p. 681–717.) **VXA**

527. —— Scientific management and efficiency in the United States navy. (Engineering magazine, New York. v. 41, July, 1911, p. 545–568.) **VDA**

Abstracted in *American review of reviews*, New York, v. 44, Aug., 1911, p. 229–230, * *DA*.

528. Taylor, A. K. Applying the principles of scientific management to the printing business. (Inland printer, Chicago. v. 48, Dec., 1911, p. 373–375.) † * **IPA**

529. Taylor, Frederick Winslow. Principles and methods of scientific management. (Journal of accountancy, New York. v. 12, June – July, 1911, p. 117–124, 181–188.) **TMA**

Extemporaneous address before the Civic Forum, New York, April 28, 1911 (not corrected or revised by the author).

1911, continued.

530. —— The principles of scientific management. New York: Harper & Brothers, 1911. 2 p.l., (1) 8–77 p. 8°. **TM**

A popular restatement of the principles as matured by the author after his retirement from active practice. More readable than *Shop management* and equally authoritative though in a more general way.

531. —— Scientific management. [With discussion.] (New England Railroad Club. [Proceedings,] Boston. Oct. 10, 1911, p. 138–187.) **TPB**

532. —— Shop management; with an introduction by H. R. Towne. New York: Harper & Brothers, 1911. 207 p., 1 table. 8°. **TM**

The fundamental classic of scientific management. Incorporates the best of the author's former writings and experience, and is the basis of later developments. Indispensable.

Originally published in the *Transactions* of the American Society of Mechanical Engineers, v. 24, p. 1337–1480, *VFA*.

533. The **Tool** room under scientific management. (Industrial engineering and engineering digest, New York. v. 9, Feb., 1911, p. 87–100.) **VA**

A description of what is required of a tool room in a modernized shop, a tool classification, notes on storage, etc.

534. **Towle,** William M. Methods of securing maximum efficiency in manufacturing and construction. (Applied science, Toronto. v. 23, Jan., 1911, p. 113–115.) **VA**

General discussion favoring specialization.

535. **Trumbull,** Frank. Efficiency; an address, at the dinner of the Canadian Club of New York, March 4, 1911. [New York, 1911.] 8 p. 12°. **TPR p.v.14, no.13**

Also printed in *Railway library, 1910,* Chicago, 1911, p. 114–117, *TPCM*.

536. **United States.** — Ordnance Office. Annual report of the chief of ordnance to the secretary of war. 1911–13. (In: United States. — War Department. Annual report, 1911–13. Washington, 1912–14.) **VWZZ**

537. **Van Alstyne,** David. Profitable ethics. (In: Congress of Technology, Boston, 1911. Technology and industrial efficiency. New York, 1911. p. 207–216.) **VBA**

538. **Villers,** L. Establishing shop standards of capacity. (Wood craft, Cleveland. v. 15, June, 1911, p. 77–78.) † **VMA**

539. **Walker,** George Blake. Miner's baths and bath houses. (Engineering magazine, New York. v. 42, Dec., 1911, p. 371–385.) **VDA**

540. **Webster,** Arthur G. Business men and scholars. (The Nation, New York. v. 93, Sept. 14, 1911, p. 238–239.) * **DA**

A letter.

541. —— Scientific management and academic efficiency. (Nation, New York. v. 93, Nov. 2, 1911, p. 416–417.) * **DA**

A letter. Scientific management in a university.

542. **Westerfield,** William. Management of ice plants — relation between manager and engineer. (Ice and refrigeration, Chicago and New York. v. 41, Dec., 1911, p. 250–252.) †† **VOA**

543. **What** is scientific management? (Railway age gazette, New York. v. 50, April 7, 1911, p. 839–842.) †† **TPB**

A critical review of the methods favored by Harrington Emerson.

544. **What** is scientific management and what it does. (Industrial engineering and engineering digest, New York. v. 9, Jan., 1911, p. 1–7.) **VA**

A definition and explanation.

545. **Whiting,** Frederic J. The personal equation in scientific management. (Stone & Webster's public service journal, Boston. v. 8, June, 1911, p. 408–411.) **VGA**

The fear that scientific management is an effort to substitute a system for integrity and ability.

546. **Woolley,** Edward Mott. Efficiency methods applied to your desk. How the "one right way" of arranging the desk and handling desk work of an office expedites work and eliminates mistakes. (System, New York. v. 20, Aug., 1911, p. 124–132.) **TMA**

547. —— Getting out the mail. (System, Chicago. v. 20, Sept., 1911, p. 284–292.) **TMA**

548. —— Scientific management in the office. (System, New York. v. 20, July, 1911, p. 3–14.) **TMA**

Deals with the standardization of office equipment and supplies.

549. **Work** routing and controlling system [of the Bullard Machine Tool Co., of Bridgeport]. (American machinist, New York. v. 34, June 8, 1911, p. 1066–1069.) †† **VFA**

Result of installing this system has been a material increase in shop production.

550. **Wyse,** I. M. Factory organization. (Metal industry, New York. v. 9, Dec., 1911, p. 502–503.) † **VIA**

1912

551. Adamson, N. E., jr. Production betterment by time studies. (Iron age, New York. v. 89, April 4, 1912, p. 835–838.) †† VDA

552. Alford, L. P. Scientific management in use. (American machinist, New York. v. 36, April 4, 1912, p. 548–550.) †† VFA

The shop system in the plants of the Link-Belt Co.

553. Allen, C. L. The general manager in specific industries. (The Efficiency Society. Transactions, New York. v. 1, 1912, p. 247–251.) TMA

Experiences with the Taylor system.

554. Allingham, G. C. Scientific shop management on the Taylor system. (Junior Institution of Engineers. Journal and record of transactions, London. v. 23, 1912, p. 38–74.) VDA

Abstract printed in *Electrician*, London, v. 70, Nov. 1, 1912, p. 130–132, †† *VGA*.

555. Amar, Jules. Une science nouvelle: organisation scientifique du travail humain. (La revue, Paris. série 6, v. 96, June 15, 1912, p. 463–472; série 6, v. 101, March 15, 1913, p. 172–182.) * DM

556. American Electric Railway Accountants' Association. Bibliography of scientific management. A selected list of books on efficiency and allied subjects. (In its: Proceedings, New York. 1912, p. 160–180.) TPYM

Also printed in the *Proceedings* of the American Electric Railway Engineering Association, New York, 1912, p. 490–510, *TPYM*.

557. American Society of Mechanical Engineers. The present state of the art of industrial management. Majority report of the sub-committee on administration. [Also minority report, and discussion of the two reports.] (American Society of Mechanical Engineers. Transactions, New York. v. 34, 1912, p. 1131–1229.) VFA

For additional discussion on the reports see *Journal* of the society, v. 35, May, 1913, p. 871–877, *VFA*.

The majority and minority reports are also reprinted in the *Journal* of the society, v. 34, Nov., 1912, p. 1601–1622, and in *Wood craft*, v. 18, Dec., 1912, p. 77–82, † *VMA*.

C. B. Thompson, in his *Scientific management*, reprints the majority report and a portion of the discussion, p. 153–204, *TM*.

Industrial engineering and engineering index, New York, gives an abstract of the majority report, v. 12, Dec., 1912, p. 235–237, *VA*.

Engineering, London, has an editorial review of the report in v. 95, June 27, 1913, p. 877–878, *VDA*.

558. American Society for Promoting Efficiency. Prospectus of the organizing committee. New York: [D. C. McMurtrie,] 1912. 22 p. 16°. TM p.v.7, no.6

559. The Art of industrial management. (Iron age, New York. v. 90, Dec. 12, 1912, p. 1387.) †† VDA

560. Ashton, T. N. The government investigation of scientific management. (Engineering news, New York. v. 67, April 25, 1912, p. 798–799.) † VDA

Letter to the editor.

561. Ballard, P. Scientific management and science. (Cassier's magazine, New York. v. 41, May, 1912, p. 425–430.) VDA

The movement criticized as not scientific.

562. Barbour, Clarence Augustus. Making religion efficient. New York: Association Press [1912]. 271 p. 12°. ZKY

563. Barth, Carl George. Betterment of machine-tool operation by scientific metal cutting. (Engineering magazine, New York. v. 42, Jan., 1912, p. 586–592.) VDA

564. Benedict, H. G. The mnemonic symbolizing of stores under scientific management. (Industrial engineering and engineering digest, New York. v. 12, July–Aug., 1912, p. 24–27, 69–70.) VA

565. Biszants, Fred. Planning work three months ahead. (Factory, Chicago. v. 8, April, 1912, p. 281–282.) † TMA

566. Bloomfield, Meyer. Scientific management: co-operative or one-sided. (Survey, New York. v. 28, May 18, 1912, p. 312–314.) SHK

Points out that the loyalty of the employee must be secured by keeping the enterprise democratic.

567. Brewer, C. S. Scientific management in the army and navy. (World's work, New York. v. 23, Jan., 1912, p. 311–316.) * DA

"The work of Naval Constructor Evans at Mare Island. The big saving at the Watertown arsenal."

568. Brombacher, M. H. C. The Rock Island arsenal labor troubles. (Iron age, New York. v. 89, Feb. 1, 1912, p. 306–307.) VDA

Lack of tact shown by officials — labor leaders wrongly accused — not a test of scientific management.

569. Browne, Frederick K. The efficiency idea in college training. (Efficiency Society. Transactions, New York. v. 4, Dec., 1912, p. 419–420.) † TMA

570. Bunnell, Sterling H. Are profits a proper measure of efficiency? (Iron age, New York. v. 90, Dec. 5, 1912, p. 1318–1319.) †† VDA

Standard costs furnish the basis for comparisons, but these cannot be definitely related to net profit.

571. Burns, George J. Notable efficiencies in railway machine-shop operation. (Engineering magazine, New York. v. 42, Jan., 1912, p. 616–621.) VDA

1912, continued.

572. **Cadbury,** Edward. Experiments in industrial organization. With a preface by W. J. Ashley. London: Longmans, Green, and Co., 1912. 3 p.l., (i)x–xxi, 296 p., 1 table. 8°. **TDC**

573. **Calder,** John. The production department. (The Efficiency Society. Transactions, New York. v. 1, 1912, p. 155–171.) **TMA**

574. **Card,** George F. Watching machines from the office. (Factory, Chicago. v. 8, May, 1912, p. 361–362.) † **TMA**

Shows how idle time was found in a wood-working factory.

575. **Cardullo,** Forrest E. Industrial administration and scientific management. What constitutes scientific management. Causes of industrial inefficiency. Consideration of the most important objections to scientific management. (Machinery, New York. v. 18, July–Aug., 1912, p. 843–847, 931–935; v. 19, Sept., 1912, p. 18–22.) †† **VFA**

Reprinted in C. B. Thompson, *Scientific management*, p. 49–102, *TM*.

576. **Carlton,** Frank T. Scientific management and the wage earner. (Journal of political economy, Chicago. v. 20, Oct., 1912, p. 834–845.) **TAA**

Points out how the movement should be made democratic by giving the workman a voice in the determination of the rate of bonus under which he will work.

Reprinted in C. B. Thompson, *Scientific management*, p. 720–733, *TM*.

577. **Church,** Alexander Hamilton, and L. P. Alford. The principles of management. (American machinist, New York. v. 36, May 30, 1912, p. 857–861.) **VFA**

An earnest attempt to discover and declare the basic regulative principles of management, with special reference to the shop and factory.

578. **Clark,** Irving. Medical department of a manufacturing plant. (Engineering magazine, New York. v. 42, March, 1912, p. 971–973.) **VDA**

Plan to increase labor efficiency through medical supervision.

579. **Cleveland,** Frederick Albert. Efficiency in public management. (The Efficiency Society. Transactions, New York. v. 1, 1912, p. 219–227.) **TMA**

580. **Coburn,** Frederic G. How to make a time study. (Factory, Chicago. v. 8, Jan., 1912, p. 21–22.) † **TMA**

581. **Collins,** Glenville A. Efficiency-engineering applied to mining. (American Institute of Mining Engineers. Transactions, New York. v. 43, 1912, p. 649–662.) **VHA**

Abstracted in *Industrial engineering and engineering digest*, New York, v. 13, April, 1913, p. 166–168, *VA*.

582. **Colvin,** Fred H. How bonus works on the Santa Fe. (American machinist, New York. v. 36, Jan. 4, 1912, p. 7–11, Feb. 1, p. 165–169.) †† **VFA**

The Santa Fe Railroad has been used as a model by so many exponents of improved methods that it is well worth studying its application of standard hours and bonus.

583. A **Comment** upon some history of the science of management. (Wood craft, Cleveland. v. 18, Dec., 1912, p. 95–96.) † **VMA**

584. **Comment** upon some of the history of the scientific management. (Engineering and contracting, New York. v. 38, Aug. 14, 1912, p. 169–170.) **VDA**

585. **Cordeal,** Ernest. Scheduling work in the railroad repair shop. (Engineering magazine, New York. v. 44, Nov., 1912, p. 191–198.) **VDA**

586. **Crabb,** J. T. Scientific hiring. (Efficiency Society. Transactions, New York. v. 1, 1912, p. 313–318.) **TMA**

587. **Dean,** Stuart. The duties of the factory superintendent. (Iron age, New York. v. 90, Nov. 21, 1912, p. 1216–1218.) †† **VDA**

Outlines details of department operation, graphical production of records and their use, etc.

588. —— Making a success of the machine shop. (Iron age, New York. v. 90, Nov. 7, 1912, p. 1075–1078.) †† **VDA**

Discusses shop methods and how losses may be prevented.

589. —— Production system for a 200-employee plant. (Iron age, New York. v. 90, Dec. 19, 1912, p. 1430–1433.) †† **VDA**

Deals with methods of lessening clerical work in an establishment having foundry and machine shop operations.

590. —— Selecting, sorting, treating and paying men. (Iron age, New York. v. 90, Nov. 28, 1912, p. 1262–1264.) †† **VDA**

Hints of an experienced works manager looking to the development of an able and contented working force.

591. **Diemer,** Hugo. The efficiency movement in 1911. (Iron age, New York. v. 89, Jan. 4, 1912, p. 87.) †† **VDA**

592. **Dow,** C. S. Scientific management. (Chautauquan, Chautauqua, N. Y. v. 66, May, 1912, p. 357–376.) * **DA**

593. **Duncan,** James. Efficiency. (Journal of accountancy, New York. v. 12, May, 1911, p. 26–34.) **TMA**

1912, continued.

594. Edwards, John R. The fetishism of scientific management. (American Society of Naval Engineers. Journal, Washington. v. 24, May, 1912, p. 355–416.) **VXA**

595. Efficiency. Railroad efficiency and the labor unions. (Iron age, New York. v. 87, March 23, 1911, p. 724–725.) †† **VDA**

Strikes of machinists and boiler makers show the attitude of organized labor.

596. Efficiency engineering forty years ago. (Engineering news, New York. v. 67, May 23, 1912, p. 990.) † **VDA**

597. Efficiency Society. Journal, New York. v. 1 – date (1912 – date). 8°. † **TMA**

598. —— [Organization and purpose; first meeting; plans; constitution.] New York, 1912. 8 p. 8°. **TMA**

599. —— Transactions. v. 1 (1912). New York, 1913. 8°. **TMA**

600. Emerson, Harrington. The efficient manufacture of railway transportation. (Engineering magazine, New York. v. 43, June, 1912, p. 341–347; v. 44, Jan. – March, 1913, p. 481–486, 751–758, 921–928; v. 45, April – June, 1913, p. 71–75, 174–182, 384–397.) **VDA**

1. The efficient manufacture of railway transportation. 2. The influence of the personality of the railroad executive. 3. Selection through individual aptitude. 4. The part played by supremely good equipment. 5. The part played by supremely good personnel. 6. Practical application of the twelve principles. 7. The last nine principles of efficiency in operation.

An account of the Pittsburgh and Lake Erie Railroad.

601. —— Practising efficiency and knowing costs; a letter to a New England manufacturer. New York: Emerson Co. [1912.] 12 p. 8°. * **C p.v. 1478, no.4**

602. —— The principles of efficiency applied to water works. (Engineering record, New York. v. 65, June 15, 1912, p. 663–664.) † **VDA**

Abstract of paper read before American Water Works Association.

603. —— The twelve principles of efficiency. New York: Engineering Magazine, 1912. 1 p.l., xviii, 423 p. 12°. **TM**

An interesting and popular analysis of some of the more obvious principles underlying scientific management.

604. An **Essay** on scientific management. (Nation, London. v. 11, Aug. 3, 1912, p. 652–654, Aug. 24, p. 766.) * **DA**

605. Falkenau, Arthur. The point of time studies commonly missed. (Iron age, New York. v. 89, April 11, 1912, p. 914.) † **VDA**

606. Fetherston, John T. Efficiency in relation to budget methods. (Engineering record, New York. v. 66, Nov. 9, 1912, p. 511–512.) † **VDA**

Suggestions based upon the work of the street cleaning bureau of the borough of Richmond, New York City.

607. Field, Leonhard F. Salaries and promotion; the efficiency record system. (Survey, London. v. 28, April 20, 1912, p. 125–126.) **SHK**

608. Flanders, Ralph E. Scientific management from a social and economic standpoint. (Machinery, New York. v. 18, June, 1912, p. 764–765.) †† **VFA**

Points out that the Taylor system does not solve the problem of distribution.

609. Fowler, Clarence P. Some criteria of value in public service industries. (Engineering magazine, New York. v. 42, March, 1912, p. 873–888.) **VDA**

610. Franklin, Benjamin Alvey. Cost methods that give the executive control of his business. (Engineering magazine, New York. v. 42, Jan. – March, 1912, p. 577–585, 793–798, 921–928; v. 43, April – Aug., 1912, p. 48–56, 192–197, 421–433, 560–566, 703–709.) **VDA**

I. The philosophy of costs. II. The place of the trial balance in the cost system. III. The cost of the salable article. IV. The economic consideration of material by costs. V. Labor from the cost viewpoint. VI. The vexing question of expense. VII. Statistics as an aid. VIII. Cost system — the basic improvement.

611. Frederick, J. George. Applying the science of management to selling. (Industrial engineering and engineering digest, New York. v. 12, Nov., 1912, p. 204–205.) **VA**

612. Frederick, J. George, and H. S. McCormack. Motion study in office work. (System, Chicago. v. 21, June, 1912, p. 563–571.) **TMA**

613. Furer, J. A. Management in the drafting room. (American machinist, New York. v. 36, April 25, 1912, p. 662–665.) †† **VFA**

Outline of a systematized management in a large drafting room.

614. Gantt, Henry Laurence. Industrial efficiency. (Machinery, New York. v. 18, May, 1912, p. 700–702.) †† **VFA**

Abstract of paper read before the American Society of Swedish Engineers, 1912.

615. —— Some side lights on industrial efficiency. (Wood craft, Cleveland. v. 17, Aug., 1912, p. 165–166.) † **VMA**

616. Gardner, Henry. Schedules for locomotive repairs. A practical application of the routing system in repair shops. (Engineering magazine, New York. v. 44, Dec., 1912, p. 417–421.) **VDA**

1912, continued.

617. Gaynor, William J. Efficient methods in legal procedure and practice. (The Efficiency Society. Transactions, New York. v. 1, 1912, p. 195–203.) **TMA**

618. Gilbreth, Frank Bunker. The first case of standardization. The standardization of the brick. (Efficiency Society. Transactions, New York. v. 1, 1912, p. 257.) **TMA**

619. —— The instruction card as a part of the Taylor plan of management. (Industrial engineering and engineering digest, New York. v. 11, May, 1912, p. 380–390.) **VA**

Presented at the meeting of the Society to Promote the Science of Management, Boston, April 9, 1912.

620. —— Motion study in the household. (Scientific American, New York. v. 106, April 18, 1912, p. 328.) †† **VA**

Reducing the cost of work in effort and time.

621. —— The place of motion study in scientific management. (Applied science, Toronto. v. 24, March, 1912, p. 177–187.) **VA**

Also printed in *Canadian manufacturer,* April, 1912.

622. —— Primer of scientific management; with an introduction by Louis D. Brandeis. London: Constable & Co., Ltd., 1912. viii, 108 p. 8°. **TM**

An elementary presentation, written in popular style, of the fundamentals of scientific management.

623. —— Scientific management in the household. (Journal of home economics, Baltimore. v. 4, 1912, p. 438–447.) **VSA**

624. Gilbreth, Lillian Moller. Psychology of management. (Industrial engineering, New York. v. 11, May–June, 1912, p. 343–349, 429–438; v. 12, July–Dec., 1912, p. 13–17, 65–68, 116–120, 155–158, 199–204, 248–253; v. 13, Jan.–May, 1913, p. 18–23, 66–70, 113–116, 161–166, 213–217.) † **VA**

"The psychology of management...means the effect of the mind that is directing work upon that work which is directed, and the effect of this indirected and directed work upon the mind of the worker."

625. Godfrey, Hollis. Attitude of labor towards scientific management. (American Academy of Political and Social Science. Annals, Philadelphia. v. 44, 1912, p. 59–73.) **SA**

626. Going, Charles Buxton. The efficiency of labor. (American review of reviews, New York. v. 46, Sept., 1912, p. 329–338.) * **DA**

Points out that one distinctive feature of the modern system of management is the restoration of the individuality of the workman.

627. —— The efficiency movement. An outline. (The Efficiency Society. Transactions, New York. v. 1, 1912, p. 11–20.) **TMA**

628. Goldmark, Josephine C. Fatigue and efficiency; a study in industry. Introduction by F. S. Lee. Containing also the substance of four briefs in defence of women's labor laws, by L. D. Brandeis and Josephine Goldmark. New York: Charities Publication Committee, 1912. 2 parts in 1 v. 8°. (Russell Sage Foundation.) **TDI**

Suggests that, although scientific management has thus far avoided the pitfall of driving, there has not been the intensive and scientific study of fatigue which might have been expected from the scientific attitude of the leaders in the movement.

629. Gray, J. H. How efficiency should benefit the employer, the employee and the public. (The Efficiency Society. Transactions, New York. v. 1, 1912, p. 67–76.) **TMA**

The need of efficiency.

630. Guernsey, John B. Scientific management in the home. (Outlook, New York. v. 100, April 13, 1912, p. 821–825.) * **DA**

"Economies can be effected by the application of the principles of modern business management to the business affairs of the home."

631. Gulick, Luther Halsey. The human element. (Efficiency Society. Transactions, New York. v. 1, 1912, p. 181–193.) **TMA**

632. Hartness, James. The factor of habit. (The Efficiency Society. Transactions, New York. v. 1, 1912, p. 237–242.) **TMA**

633. —— The human factor in works management. New York: McGraw-Hill Book Co., 1912. x, 159 p. 12°. **TM**

The undue haste with which outside followers of scientific management have attempted to revolutionize the methods and habits of thought of workmen and employers is pointed out.

634. Hathaway, H. K. Elementary time study as a part of the Taylor system of scientific management. (Industrial engineering and engineering digest, New York. v. 11, Feb., 1912, p. 85–95.) **VA**

Reprinted in C. B. Thompson, *Scientific management,* p. 520–543, *TM.*

An exposition of the principles and methods of the art which is the foundation of scientific management.

635. —— The planning department, its organization and function. (Industrial engineering and engineering digest, New York. v. 12, July–Sept., 1912, p. 7–11, 53–55, 97–101.) **VA**

Reprinted in C. B. Thompson, *Scientific management,* p. 366–394, *TM.*

636. Herzog, Siegfried. Industrielle Verwaltungstechnik. Stuttgart: F. Enke, 1912, viii, 519 p. 8°. **TM**

1912, continued.

637. Hibbard, E., and E. S. PHILBRICK. Teaching of scientific shop management with use of engineering school as the laboratory. (Society for the Promotion of Engineering Education. Proceedings, Ithaca, New York. v. 19, 1912, p. 91–145.) **VDA**

638. Higgins, Aldus C. Suggestion importance of management studies. (Iron age, New York. v. 89, April 11, 1912, p. 914.) † **VDA**

639. Hine, Charles DeLano. Modern organization: an exposition of the unit system. New York: Engineering Magazine Company, 1912. 1 p.l., 5–110 p. 12°. (Works management library.) **TM**

Reprinted from the *Engineering magazine*, v. 42, p. 481–487, 720–722, 869–872; v. 43, p. 44–48, 217–221, 348–352, 588–591, *TM*.

1. The unit system on the Harriman lines. 2. Operation of the unit system. 3. Broadening the ideals of line supervision. 4. Over-specialization. 5. Fallacies of accounting. 6. Supplies and purchases. 7. Line and staff. 8. The genesis and revelation of organization.

Develops the thesis that specialization has already been carried too far on the railroads and that what they need is decentralization.

640. Huhn, E. Der Groszbetrieb und seine Organisation. illus. (In: Die Technik im zwanzigsten Jahrhundert. Braunschweig, 1912. Bd. 4, p. 448–467.) **VBA**

641. Hutchins, F. Lincoln. The railroad problem: capitalization and regulation. Deductions from unit costs of twenty American railways. (Engineering magazine, New York. v. 42, Feb., 1912, p. 709–719.) **VDA**

642. —— The railroad problem; rates, unit costs and efficiency. (Engineering magazine, New York. v. 42, Jan., 1912, p. 488–500.) **VDA**

643. Investigation of scientific management. (Engineering news, New York. v. 67, March 28, 1912, p. 603.) † **VDA**

644. Jackson, Earle D. Procedure in shop electrification. (Engineering magazine, New York. v. 42, Jan., 1912, p. 556–557.) **VDA**

645. Jones, Edward D. Military history and the science of business administration. (Engineering magazine, New York. v. 43, Oct.–Dec., 1912, p. 1–6, 185–190, 321–326.) **VDA**

646. —— Review of Taylor's "Shop management." (American economic review, Princeton, N. J. v. 2, June, 1912, p. 369–370.) **TAA**

647. Kent, Robert Thurston. An auxiliary to the colleges in training scientific managers. (Industrial engineering and engineering digest, New York. v. 12, Nov., 1912, p. 206.) **VA**

648. —— The principles of industrial lighting. Part 4. (Industrial engineering and engineering digest, New York. v. 12, June, 1912, p. 454–460.) **VA**

Time study as a method of determining light efficiency.

649. Kershaw, John B. C. Co-partnership and profit sharing as a solution for the wages problem. (Engineering magazine, New York. v. 43, Sept., 1912, p. 837–845.) **VDA**

650. Knauer, Henry S. Scientific management of a locomotive boiler shop. (Harvard engineering journal, Cambridge, Mass. v. 11, June, 1912, p. 103–114.) **VDA**

651. Knoeppel, Charles Edward. The despatching system for the foundry. (Iron age, New York. v. 90, Dec. 5, 1912, p. 1326–1327.) †† **VDA**

A detailed listing of the points to be observed in providing in advance for orderly and expeditious production.

652. Lay, David. "Graphs" as factory records: how one manufacturing plant uses graphic charts to record the production, sales and costs of the business and how it tabulates this data in its "curve room." illus. (System, Chicago. v. 21, 1912, p. 390–395.) **TMA**

653. Lewin, C. M. Betriebsökonomie und Privatwirtschaftslehre. (Zeitschrift für Werkzeugmaschinen und Werkzeuge, Berlin. Bd. 17, Oct. 5, 1912, p. 4–7.) † **VFA**

A study in the economic operation of factories.

654. Lewis, Wilfred. Conserving the data of scientific management. (Iron age, New York. v. 90, Dec. 5, 1912, p. 1324–1325.) †† **VDA**

The place of the college in gathering this material and making it available for all industries.

655. Maguire, T. F. J. Relative economy of various types of draft equipment. (Engineering magazine, New York. v. 42, March, 1912, p. 929–932; v. 43, April–June, 1912, p. 22–32, 198–205, 389–398.) **VDA**

656. Matthews, J. M. Electric power in building the world's greatest aqueduct. (Engineering magazine, New York. v. 44, Nov., 1912, p. 161–184.) **VDA**

657. Merton, Holmes W. Sizing up the man; can the latent powers in the individual be discovered and applied to advantage in the selection of the higher executive? illus. (Business, Detroit. v. 28, Jan., May, 1912, p. 41–46, 366–371.) **TMA**

1912, continued.

658. Methods of promoting efficiency in maintenance on the Pittsburgh and Lake Erie. (Engineering record, New York. v. 66, Dec. 7, 1912, p. 624–626.) † VDA

Evaluation of section work on a unit basis and record system of keeping labor and material charges on all operations.

659. Miller, Charles S. An example of motion study. (Scientific American supplement, New York. v. 73, July 6, 1912, p. 3.) VA

660. —— Motion study. (Southern machinery, Atlanta. v. 28, June, 1912, p. 60–65.) † VFA

661. Molinard, W. R. Staff co-operation toward better relations and increased efficiency of employees. (Progressive age, New York. v. 30, Feb. 1, 1912, p. 118–119.) †† VOA

Also printed in *Electrical review.* Chicago, v. 60, Feb. 17, 1912, p. 319–320, *VGA.*

662. Morrison, Charles J. The object of effective organization. (Engineering magazine, New York. v. 42, Jan., 1912, p. 649–652.) VDA

A statement of some of the beneficent results from effective organization derived by the workman.

663. Muensterberg, Hugo. Psychologie und Wirtschaftsleben; ein Beitrag zur angewandten Experimental-Psychologie. Leipzig: J. A. Barth, 1912. viii, 192 p. 8°. TB

664. Myers, F. C. Some facts regarding efficiency. (Southern machinery, Atlanta. v. 29, Nov., 1912, p. 1–2.) † VFA

665. Parkhurst, Frederic Augustus. Applied methods of scientific management. New York: J. Wiley & Sons, 1912. xii, 325 p., 9 charts. 8°. TM

A detailed description of the methods of the Ferracute Machine Co.

666. —— The scientific management in practice. (Industrial engineering and engineering digest, New York. v. 11, Jan.–May, 1912, p. 15–17, 112–117, 187–190, 272–284, 365–375; v. 12, July–Aug., 1912, p. 1–5, 61–65.) VA

The realization of efficiency through the science of management.

667. Pattison, Mary Stranahan Hart. Domestic engineering. The housekeeping experiment station at Colonia, New Jersey. (Scientific American, New York. v. 106, April 18, 1912, p. 330–331.) †† VA

668. Perrigo, Oscar E. Scientific management. (Southern machinery, Atlanta. v. 27, Jan., 1912, p. 78–79.) † VFA

669. Peirce, W. S. Government workshop management. (Iron age, New York. v. 89, Feb. 22, 1912, p. 476–479.) VDA

The arsenal labor troubles as viewed from the official side — defense of management by army officers.

670. Popcke, A. G. The relation of capital, labor and efficiency in manufacturing. (Engineering magazine, New York. v. 43, Sept., 1912, p. 857–863.) VDA

"Pointing out the necessity of increasing efficiency."

671. Present status of the efficiency movement. (Engineering record, New York. v. 66, Nov. 30, 1912, p. 594, 601–602.) † VDA

Comments.

672. The **Promotion** of efficiency. (Industrial engineering and engineering digest, New York. v. 12, April, 1912, p. 284–290.) VA

Two societies, one professional and one educational, have been formed.

673. Redfield, William Cox. "The limits of efficiency." Address before the Cleveland Chamber of Commerce, Tuesday, Nov. 19, 1912. [Cleveland, 1912.] 17 p. 8°. TM p.v.10, no.5

674. —— The moral value of scientific management. (Atlantic monthly, Boston. v. 110, Sept., 1912, p. 411–417.) * DA

"The importance of a consideration of the human problem is emphasized."

675. —— Scientific spirit in management. (American machinist, New York. v. 36, April 18, 1912, p. 612–615.) †† VFA

Close co-operation and sympathy between the management and the workmen is foremost and basic.

676. Reed, H. W. Two turret lathe instruction cards. (American machinist, New York. v. 36, June 6, 1912, p. 915–917.) †† VFA

677. Rogers, Sumner B. Making fewer motions at machines. (Factory, Chicago. v. 8, April, 1912, p. 268–272.) † TMA

Results of motion study in a factory.

678. Scientific management. "The fear of over specialization." (Engineering, London. v. 93, March 1, 1912, p. 289–291.) †† VDA

Editorial.

679. Scientific management: the law of competitive planning. (Engineering and contracting, Chicago. v. 37, May 15, 1912, p. 540–541.) † VDA

680. Scientific management: the law of maximum "output factor." (Engineering and contracting, Chicago. v. 37, April 24, 1912, p. 456–457.) † VDA

681. Scientific management: the law of unit cost reports. (Engineering and contracting, Chicago. v. 37, April 17, 1912, p. 428–429.) † VDA

1912, continued.

682. Scientific management: the laws of plant location and design. (Engineering and contracting, Chicago. v. 37, April 3, 1912, p. 367–369.) † VDA

683. Scientific management — philosophy of purchasing supplies. (Engineering and contracting, Chicago. v. 37, June 19, 1912, p. 691–692.) † VDA

684. Scientific management defined and the scope of this science. (Engineering and contracting, Chicago. v. 37, March 27, 1912, p. 339.) † VDA

685. Scientific management more than a labor problem. (Industrial engineering and engineering digest, New York. v. 11, June, 1912, p. 467–468.) VA

"Points out the inclusiveness of the method."

686. Seubert, R. F. Fabrikorganisation nach Taylor'schem System (Scientific management). (Technologist, New York. v. 17, Nov., 1912, p. 135–143.) VA

687. Shepard, George H. An analysis of practical time motion studies. (Engineering magazine, New York. v. 43, July, 1912, p. 538–546.) VDA

688. Simeon, Charles J. The scientific management of a foundry. (Iron trade review, Cleveland. v. 50, Jan. 4, 1912, p. 68–70.) †† VHA

The use of the slide rule for setting piecework prices for molding in a large casting shop in the West.

689. Smallwood, Julian C. The efficiency principles of technical education. (Engineering magazine, New York. v. 42, March, 1912, p. 915–920.) VDA

690. Smith, Oberlin. Managing scientifically. (Iron age, New York. v. 89, April 11, 1912, p. 913.) † VDA

691. Smith, W. R. The management and the foreman. (Wood craft, Cleveland. v. 18, Dec., 1912, p. 98.) † VMA

692. Sterling, Frank W. The successful operation of a system of scientific management. (American Society of Naval Engineers. Journal, Washington. v. 24, Feb., 1912, p. 167–238.) VXA

A detailed explanation of the operation of the Taylor system in the Link-Belt Co., Philadelphia.

Reprinted in C. B. Thompson, *Scientific management*, p. 296–365, *TM.*

693. Symons, Wilson E. The practical application of scientific management to railway operation. With discussion. (Franklin Institute. Journal, Philadelphia. v. 173, Jan.–April, 1912, p. 1–47, 141–180, 271–294, 365–409.) VA

An attack on Mr. Emerson's methods on the Santa Fe Railway.

694–695. System of shop management. What the government has to say on the subject. (Leather manufacturer, Boston. v. 23, June, 1912, p. 219–222.) VMA

696. Systematic research as a principle of management economics. (Engineering and contracting, Chicago. v. 37, Jan. 17, 1912, p. 57–58.) † VDA

697. Systems of shop management investigated. (Wood craft, Cleveland. v. 17, April, 1912, p. 15–19.) † VMA

Includes the report in full of the special committee of the House of Representatives appointed to investigate the Taylor and other systems of shop management.

698. Tardy, Walter B. Scientific management in the navy. (Engineering magazine, New York. v. 42, Jan., 1912, p. 640–645.) VDA

A plea for a standard organization of the engineer division aboard ship.

699. Taylor, Frederick Winslow. Changing from ordinary to scientific management. (Industrial engineering and engineering digest, New York. v. 12, April, 1912, p. 267–272.) VA

Made up of excerpts from Mr. Taylor's paper on "shop management" read before the American Society of Mechanical Engineers, 1903.

700. Taylor, Frederick Winslow, and S. E. THOMPSON. Concrete costs; tables and recommendations for estimating the time and cost of labor operations in concrete construction and for introducing economical methods of management. New York: J. Wiley & Sons, 1912. xxii, 709 p., 1 pl. 8°. VEOM

701. Thompson, Clarence Bertrand. The reason for a payroll system. Striking a better balance between work and wages. Why productive returns vary. How the method of fixing and making payment influences efficiency. (System, New York. v. 2, Sept., 1912, p. 249–256.) TMA

702. —— When higher wages pay. (System, New York. v. 22, Oct., 1912, p. 339–348.) TMA

Reprinted in his *Scientific management*, p. 684–705, *TM.*

Why pay-roll dollars buy more in store and factory if the method of paying puts a premium on extra effort.

703. Thompson, Frank B. Training for business efficiency. (Efficiency Society. Transactions, New York. v. 1, 1912, p. 413–418.) TMA

704. A **Thought** on scientific management. (Industrial engineering and engineering digest, New York. v. 12, April, 1912, p. 293.) VA

1912, continued.

705. Towne, Henry R. The general principles of organization applied to an individual manufacturing establishment. (The Efficiency Society. Transactions, New York. v. 1, 1912, p. 77–83.) **TMA**

706. Towne, Henry R., and others. The human element in scientific management. (Iron age, New York. v. 89, April 11, 1912, p. 912–914.) † **VDA**

Employee has no right to control.

707. Valentine, Herbert G. Social efficiency. (Efficiency Society. Transactions, New York. v. 1, 1912, p. 407–411.) **TMA**

708. Wallace, L. W. Efficiency in railway management. (Indiana Engineering Society. Proceedings, Indianapolis. v. 32, 1912, p. 113–126.) **VDA**

Shows that the railways have long given attention to economic operation and that they are among the best managed properties in the United States.

709. Wallichs, A. Moderne amerikanische Fabrikorganisationen (System Taylor). (Technik und Wirtschaft, Berlin. Jahrg. 5, Jan., 1912, p. 1–23.) **TAA**

710. Webner, Frank E. A treatise on cost finding. (Industrial engineering and engineering digest, New York. v. 12, May, 1912, p. 357–362.) **VA**

711. Weston, W. H. Cost data of power-plant installation and operation. (Engineering magazine, New York. v. 42, Jan., 1912, p. 549–555.) **VDA**

712. Wight, H. C. Routing work by schedule. (Factory, Chicago. v. 8, May, 1912, p. 358–359, 381–385.) † **TMA**

713. Winslow, C. E. A. Temperature and ventilation as efficiency factors in mills. (Engineering record, New York. v. 66, Dec. 21, 1912, p. 688.) † **VDA**

Abstract from address made at the National Conference on Industrial Diseases.

714. Wolgamot, Arthur C. Shopman's view of efficiency systems. (Southern machinery, Atlanta. v. 28, July, 1912, p. 85–86.) † **VFA**

715. Woolley, Edward Mott. The business man's desk. (System, Chicago. v. 21, March, 1912, p. 304–311.) **TMA**

716. —— "Lost motions" in retail selling. (System, Chicago. v. 21, April – May, 1912, p. 366–376, 465–472.) **TMA**

717. —— The wanton waste of labor. (System, New York. v. 21, Jan. – Feb., 1912, p. 13–26, 173–181.) **TMA**

Some of the common leaks through which pour millions of dollars a year lost because of inadequate equipment.

1913

718. Abaut, A. Travail d'usine. (Revue de métallurgie, Paris. v. 10, Sept., 1913, p. 1147–1175.) **Eng. Lib.**

General remarks on the management of shops: organization, building plan, central bureau, and control.

719. Allingham, H. W. Notes on scientific shop management. (S. A. E. bulletin, New York. v. 5, Dec., 1913, p. 240–256.) **TOL**

An account of an investigation carried out at the works of Hans Renold, Ltd., Manchester, England.

720. Anderson, W. P. Cost keeping for reenforced-concrete buildings. (Engineering magazine, New York. v. 45, April, 1913, p. 34–49.) **VDA**

721. Andrew, Harriet F. Management. (Efficiency Society. Journal, New York. v. 3, July, 1913, p. 75–80.) † **TMA**

Report of experience from a woman having charge for fourteen years of forty to forty-five men in shop work.

722. Auel, Carl Bennett. The formation and organization of a large manufacturing corporation. (Electric journal, Pittsburgh. v. 10, April, 1913, p. 338–346.) **VGA**

Based on a lecture prepared with the aim of explaining the subject of works management to comparatively young men.

723. —— Orders and methods of handling. (Electric journal, Pittsburgh. v. 10, May, 1913, p. 442–454.) **VGA**

On works management, giving the methods in general use.

724. The **Automatic** rating of workmen. Springfield armory's system... (Iron age, New York. v. 91, April 3, 1913, p. 811–812.) † **VDA**

725. Barnes, E. A. The efficiency engineer in the foundry. (American Institute of Metals. Transactions, Buffalo. v. 7, 1913, p. 184–187.) **VIA**

Discusses the efficiency problems of the foundry and the best way of solving them.

726. Blankenburg, Rudolph. The municipal need of technically trained men. (Scientific American, New York. v. 108, April 12, 1913, p. 342–343.) †† **VA**

727. Bohn, C. B. How scientific management worked in our plant. [With discussion.] (American Institute of Metals. Transactions, Buffalo. v. 7, 1913, p. 191–221.) **VIA**

Plant of the Aluminum Castings Company.

728. Booth, W. M. The chemical engineer and industrial efficiency. (Scientific American supplement, New York. v. 75, April 5, 1913, p. 210–211.) †† **VA**

Considers methods that can be adopted in the conduct of manufacturing business.

1913, continued.

729. **Brants,** Victor L. J. Le taylorisme: cas nouveau d'un vieux problème. (La Revue générale, Bruxelles. tome 98, July, 1913, p. 75–82.) *DM

730. **Brombacher,** Max H. C. Hunger, rest, and shop efficiency: rest periods in European works appear to promote contentment. (Iron age, New York. v. 91, May 8, 1913, p. 1126.) †VDA

731. **Buch,** Fred. A simple system for filing and handling tracings and prints. (Engineering magazine, New York. v. 45, July, 1913, p. 546–561.) VDA

"Describes a system by which drawings may be kept with the greatest accessibility and minimum of complexity in administration."

732. **Calder,** John. The new element in the art of management. (Stevens indicator, Hoboken, New Jersey. v. 30, July, 1913, p. 203–214.) VDA

Defines what is known as the "scientific method" and considers the principle which underlies its successful practice.

733. **Callahan,** E. L. Organizing a new-business department. (Electrical review and western electrician, Chicago. v. 62, May 31, 1913, p. 1095–1102.) VGA

Offers suggestions for the organization and management of electric light and power companies.

734. **Callaway,** H. R. Efficiency and the worker. (Engineering magazine, New York. v. 45, Aug., 1913, p. 715–717.) VDA

Presents conditions from the viewpoint of the "man on the job."

735. **Christie,** A. G. Scientific management. (Wisconsin engineer, Madison. v. 17, April, 1913, p. 283–292.) VDA

Defines the expression and discusses its aims and principles.

736. **Church,** Alexander Hamilton. Practical principles of rational management. (Engineering magazine, New York. v. 44, Jan. – March, 1913, p. 487–494, 673–680, 894–903; v. 45, April – June, 1913, p. 24–33, 166–173, 405–411.) VDA

737. —— Premium, piece work and the expense burden. (Engineering magazine, New York. v. 46, Oct. – Nov., 1913, p. 7–18, 207–216.) VDA

738. **Coburn,** Frederic G. The science and art of management. (Iron age, New York. v. 91, Jan. 23, 1913, p. 248–249.) ††VDA

Urges training in the psychological principles of handling men.

739. **Collins,** F. W. Causes of failure in efficiency work. (Engineering magazine, New York. v. 45, Sept., 1913, p. 862–866.) VDA

740. **Colvin,** Fred H. The latest development in motion study. illus. (American machinist, New York. v. 38, June 5, 1913, p. 937–939.) ††VFA

The use of the stereoscopic camera and small incandescent lamps to study the motions of an operator's hands during operation.

741. **Cooke,** Morris Llewellyn. Spirit and social significance of scientific management. (Journal of political economy, Chicago. v. 21, June, 1913, p. 481–493.) TAA

Scientific management can be developed only through a course of individual and collective discipline that can last over a series of years.

742. **Copley,** F. B. How it works; what manufacturers and workmen are getting out of scientific management. (American magazine, New York. v. 75, April, 1913, p. 11–17.) *DA

Summarizing the results of an extensive investigation and approved personally by Mr. Taylor.

743. **Cordeal,** Ernest. Force organization in the railroad repair shop. (Engineering magazine, New York. v. 45, July, 1913, p. 538–546.) VDA

The betterment of railway management by effort originating and applied within the organization.

744. **Corse,** W. M. Preparation for scientific management in our plant. (Efficiency Society. Journal, New York. v. 3, Dec., 1913, p. 72–74.) †TMA

The Lumen Bearing Co., Buffalo.

745. **Cotter,** Arundel. The conservation of the worker. (Engineering magazine, New York. v. 45, July, 1913, p. 489–506.) VDA

746. Une **Critique** du système Taylor. (Le Génie civil, Paris. v. 62, April 12, 1913, p. 474–475.) ††VA

747. **Crocker,** W. J. Efficiency as applied to mining. (Mining and engineering world, Chicago. v. 38, April 19, 1913, p. 765–766, May 17, p. 950–952, June 7, p. 1087–1088, June 21, p. 1183; v. 39, Aug. 16, 1913, p. 299–300.) ††VHA

Suggestions affecting mine profits.

748. **Dana,** Richard T., and H. P. GILLETTE. Cost-analysis engineering. (In: Cyclopedia of civil engineering. Chicago, 1913. v. 3, p. 313–380.) VD

749. **Darlington,** Thomas. Bathing facilities in industrial plants. (Engineering magazine, New York. v. 46, Dec., 1913, p. 428–430.) VDA

A résumé of the physiological benefits of hot and cold baths.

750. **Davidson,** William M. How to measure the efficiency of teachers. (National Education Association. Journal of proceedings and addresses. Ann Arbor, Mich., 1913. 1913, p. 286–292.) SSA

751. **Dean,** Stuart. Shop and foundry management. New York: Williams Co., 1913. 220 p. 8°. TM

1913, continued.

752. Discussion of reports of sub-committee on administration on the present state of the art of industrial management. (American Society of Mechanical Engineers. Journal, New York. v. 35, March, 1913, p. 447–518.) **VFA**

753. Doane, A. O. Economy in purchasing and using coal. (Engineering magazine, New York. v. 45, June, 1913, p. 398–404.) **VDA**

"Conservation does not mean non-use but most efficient use, also that not price alone but price multiplied into quantity is the basis of comparison under the general efficiency formula."

754. Dodge, James Mapes. Industrial management. (Industrial engineering and engineering digest, New York. v. 13, Aug., 1913, p. 330–332.) **VA**

Scientific management as related to the plant or industry in its entirety.

755. Efficiency management in a gas traction plant. (Iron trade review, Cleveland. v. 52, Jan. 2, 1913, p. 49–60.) †† **VHA**

Explains how work is scientifically routed in works which embrace foundries, machine and erecting shops and other departments.

756. Emerson, Harrington. The creation of organization with special reference to personnel. (Southern machinery, Atlanta. v. 29, March, 1913, p. 159–161.) † **VFA**

757. Engine house efficiency. (Railway and engineering review, Chicago. v. 53, Aug. 2, 1913, p. 736–738.) † **TPB**

Deals with organization, cost of repairs, operation, etc.

758. Frederick, Christine. Efficiency in the home. (Efficiency Society. Journal, New York. v. 3, Dec., 1913, p. 69–71.) † **TMA**

759. Frey, John P. Relationship of scientific management to labor. (Journal of political economy, Chicago. v. 21, May, 1913, p. 400–411.) **TAA**

Also printed in *American federationist,* Washington, v. 20, April, 1913, p. 296–302, † *TDR.* An abstract published in the *Iron trade review,* Cleveland, v. 52, April 7, 1913, p. 917–918, † *VHA.*

Discusses some of its unscientific features.

760. Galloway, Lee. Organization and management. Part 1: Business organization. Part 2: Business management. New York: Alexander Hamilton Institute [1913]. xix, 504 p. 8°. (Modern business. v. 2.) **TM**

761. Gantt, Henry Laurence. The misleading effect of wrong standards. (Industrial engineering and engineering digest, New York. v. 13, May, 1913, p. 202.) **VA**

An address before the Society to Promote the Science of Management, March 21, 1913.

762. —— The permanence of workmen's training. (American machinist, New York. v. 38, Jan. 2, 1913, p. 33–36.) †† **VFA**

Discussion before the American Society of Mechanical Engineers of report on the "Present state of the art of industrial management."

763. —— Work, wages, and profits. New York: Engineering Magazine Co., 1913. 312 p., 6 charts. 2. ed. 12°. (Works management library.) **TM**

The meat of the author's numerous papers and discussions on the more "human" side of scientific management. A classic and indispensable.

764. Gilbreth, Frank Bunker. Units, methods and devices of measurements under scientific management. (Journal of political economy, Chicago. v. 21, July, 1913, p. 618–629.) **TAA**

765. Gimmer, N. O "sistemye Teilora." (Russkoye bogastvo, St. Petersburg. Nov., 1913, p. 132–154.) * **QCA**

766. Godfrey, Hollis. The teaching of scientific management in engineering schools. (Society for the Promotion of Engineering Education. Proceedings, Ithaca, New York. v. 20, 1913, p. 69–81.) **VDA**

767. Goldberger, M. A. More work from the shop. (System, New York. v. 24, 1913, p. 547.) **TMA**

768. Goss, W. F. M. Engineering development and human welfare. (Industrial engineering and engineering digest, New York. v. 13, Aug., 1913, p. 354–357.) **VA**

Extracts from an address before the joint meeting of the American Society of Mechanical Engineers and the Verein Deutscher Ingenieure, Leipzig, June 23, 1913.

769. Gregg, G. A. W. Premium system in a steel foundry. (Engineering magazine, New York. v. 44, Feb., 1913, p. 776–778.) **VDA**

A weight basis for rates in the foundry cleaning room.

770. Greul, Frederick B. Organizing the church for efficient economic service a present day need. (Efficiency Society. Journal, New York. v. 3, Dec., 1913, p. 65–68.) † **TMA**

771. Hall, Herbert W. Die Taylor'schen Grundsätze der Betriebsleitung und ihre Verwertung für europ. Verhältnisse. (Schweizerische Bauzeitung, Zürich. Bd. 62, Sept. 13, 1913, p. 145–146.) † **VEA**

A discussion of the variance of labor conditions in Europe and America and consequent difficulties in the use of the system.

772. Hanus, Paul Henry. Improving school systems by scientific management: underlying principles. (National Education Association. Journal of proceedings and addresses. Ann Arbor, Mich., 1913. 1913, p. 247–259.) **SSA**

1913, continued.

773. Harrington, C. A. The relation of detailed planning to the cost of production. (Engineering magazine, New York. v. 45, June, 1913, p. 353–358.) **VDA**

"Outlines planning system of any small shop, and shows that to be successful, it must depend upon an intelligent comparison of costs."

774. —— Shortcomings of small concerns. (Iron age, New York. v. 92, July 10, 1913, p. 78–79.) †† **VDA**

Considers they are not as well managed as the large companies.

775. Hill, Norman A. Individual efficiency. (Applied science, Toronto. v. 25, Jan., 1913, p. 83–87.) **VA**

Remarks on the technical meaning of the term and means of increasing personal efficiency.

776. Himes, A. J. Industrial need of technically trained men. (Scientific American, New York. v. 108, May 10, 1913, p. 438–440.) †† **VA**

Opportunities that await the trained engineer.

777. Hobson, J. A. Scientific management. (Sociological review, London. v. 6, 1913, p. 197–212.) **SA**

778. Hoyt, Charles Wilson. Scientific sales management; a practical application of the principles of scientific management to selling. New Haven, Conn.: G. B. Woolson & Co., 1913. viii p., 3 l., (1)4–204 p., 1 diagr., 7 pl. illus. 8°. **TM**

779. Hunger and shop efficiency. (Iron age, New York. v. 91, May 1, 1913, p. 1072.) † **VDA**

780. Hutchins, F. Lincoln. A practical plan for standardizing railroad records. (Engineering magazine, New York. v. 45, Aug., 1913, p. 664–668.) **VDA**

"Outlines the elements of a feasible standardization."

781. Hutchinson, Rollin W. Motor transportation as an aid to industrial economy. (Engineering magazine, New York. v. 44, Jan. – March, 1913, p. 526–546, 732–750, 851–866.) **VDA**

782. Jandron, Francis L. Selection and employment. (Engineering magazine, New York. v. 45, July, 1913, p. 562–567.) **VDA**

Discusses the broad outlines and possibilities of the subject.

783. Jervis, Perlee V. Efficiency in piano study. (Efficiency Society. Bulletin, New York. v. 2, Jan., 1913, p. 13.) † **TMA**

784. Johnston, A. W. The industrial need of technically trained men. (Scientific American, New York. v. 109, Oct. 11, 1913, p. 292.) †† **VA**

The possibilities of railway engineering.

785. Kaempffert, Waldemar. Industrial need of technically trained men. (Scientific American, New York. v. 108, March 15, 1913, p. 252–254.) †† **VA**

Introduction to a series of articles on scientific manufacturing and the opportunities it offers.

786. Keeping track of the work in the shop. (Industrial engineering and engineering digest, New York. v. 13, Nov., 1913, p. 453–458.) **VA**

How the bulletin board and route sheet operate to route work to the machines and to locate any part of any job at any time.

787. Kendall, Henry P. Prerequisites to scientific management. (Industrial engineering and engineering digest, New York. v. 13, May, 1913, p. 201–202.) **VA**

A symposium which considers the attitude of management and men, and the misleading effect of wrong standards.

788. —— Systematized and scientific management. (Journal of political economy, Chicago. v. 21, July, 1913, p. 593–617.) **TAA**

789. Kent, Robert Thurston. Enlisting the foreman's co-operation. A method of accomplishing this necessary preliminary in the installation of scientific management in an industry. (Industrial engineering and engineering digest, New York. v. 13, July, 1913, p. 285–288.) **VA**

790. —— Micro-motion study in industry. (Iron age, New York. v. 91, Jan. 2, 1913, p. 34–37.) †† **VDA**

Discusses the progress of efficiency producing methods in 1912.

791. —— Motion study in the box shop. (Industrial engineering and engineering digest, New York. v. 13, Aug., 1913, p. 325–329.) **VA**

Explains how an effort to cut down the internal transportation movements effected a 50 per cent. increase in capacity.

792. —— Motion study for the move-man. How the automatic truck decreases the cost of shop transportation. (Industrial engineering and engineering digest, New York. v. 13, March, 1913, p. 99–102.) **VA**

793. —— Possible economies in shop transportation. (Iron age, New York. v. 92, Aug. 7, 1913, p. 280–282.) †† **VDA**

Explains devices which have resulted in reducing time between machine operations.

794. —— The tool room in scientific management. (Iron age, New York. v. 92, Sept. 4, 1913, p. 496–499.) †† **VDA**

Shows the importance of the relation existing between the tool room and the shop as regards maximum production.

795. Kent, William. Investigating an industry. (Industrial engineering and engineering digest, New York. v. 13, Feb. –

1913, continued.

Oct., 1913, p. 49–53, 105–108, 152–154, 208–210, 247–250, 293–296, 335–337, 371–373, 425–426.) **VA**

General considerations. A business diagnostician. The diagnosis. The accounting and sales departments. The doctor's preliminary report. The salesmen's conference. The doctor's opinions and recommendations. Proposed reorganization of the board of directors. Duties of the functional committees of the board of directors.

796. Kimball, Dexter Simpson. Principles of industrial organization. New York: McGraw-Hill Book Company, 1913. 2 p.l., vii–xiv, 272 p., 1 pl. illus. 8°. **TM**

Summarizes the generally settled elements of the subject.

797. The **Knack** of management. Chicago: A. W. Shaw Co. [cop. 1913.] 3 v. illus. 8°. (Students' business book series.) **TM**

v. 1. Systematizing the factory, by John Coapman.

v. 2. Building up the force, by H. A. Warman.

v. 3. Managing the men.

798. Knapp, Edwin J. Bettering the efficiency of the structural shop. (Engineering magazine, New York. v. 45, April, 1913, p. 81–88.) **VDA**

799. —— Inspection methods that accomplish maximum good. (Engineering magazine, New York. v. 45, Aug., 1913, p. 701–708.) **VDA**

"Treats of the inspection of machines."

800. Knoeppel, Charles Edward. How to make a time study. (American Institute of Metals. Transactions, Buffalo. v. 7, 1913, p. 55–86.) **VIA**

Abstract printed in *Industrial engineering and engineering digest,* New York, v. 13, Dec., 1913, p. 501–505, † *VA.*

801. Lahy, J. M. L'étude scientifique des mouvements et le chronométrage. (Revue socialiste, Paris. tome 58, Dec. 15, 1913, p. 502–520.) **SFA**

802. —— La méthode Taylor peut-elle déterminer une organisation scientifique au travail? (Grande revue, Paris. année 17, v. 81, Sept. 25, 1913, p. 345–361.) * **DM**

803. Laine, William B. The arrangement and operation of store rooms. (Industrial engineering and engineering digest, New York. v. 13, Dec., 1913, p. 495–500.) † **VA**

A detailed study of a department whose neglect may cost much loss and tie up capital.

804. Langley, Ralph W. Notes on time studies. (Industrial engineering and engineering digest, New York. v. 13, Sept., 1913, p. 385–386.) † **VA**

An account of difficulties met in establishing tasks and inducing workmen to accomplish them.

805. Larner, Chester W. The industrial need of technically trained men. (Scientific American, New York. v. 109, Sept. 13, 1913, p. 218.) †† **VA**

The possibilities that await the hydraulic engineer.

806. Le Chatelier, Henri. The political economy of production. A plain statement of the relations existing between production, wages, purchasing power, and management. (Industrial engineering and engineering digest, New York. v. 13, May–June, 1913, p. 197–200, 257–258, 260.) **VA**

807. —— Réponse à une critique du système Taylor. (Le Génie civil, Paris. v. 62, April 26, 1913, p. 514.) †† **VA**

A letter.

808. Lichtner, William O. A classification of materials encountered in excavation operations which has been successfully employed on sewer construction. (Engineering and contracting, Chicago. v. 40, Sept. 17, 1913, p. 320–322.) † **VDA**

A report of time studies made as a basis of comparison.

809. Lodge, William. Management. (Efficiency Society. Journal, New York. v. 3, July, 1913, p. 65–74.) † **TMA**

Suggestions from the writer's experience.

810. —— Rules of management, with practical instructions on machine building. New York: McGraw-Hill Book Company, 1913. xv, 139 p. 12°. **TM**

811. Mackinlay, Margaret. Distribution of office space and equipment. (Efficiency Society. Journal, New York. v. 3, Nov., 1913, p. 77–80.) † **TMA**

812. Marchand, H. Mr. Fairfax Harrison's scheme of industrial co-operation applied to railway operation. (International Railway Congress Association. Bulletin, Bruxelles. v. 27, 1913, p. 995–1004.) **TPB**

813. Maury, Arthur G. Handling a dinner meeting. (Efficiency Society. Journal, New York. v. 3, Dec., 1913, p. 11–12.) † **TMA**

814. Micro-motion study. A new development in efficiency. illus. (Scientific American, New York. v. 108, Jan. 25, 1913, p. 84.) †† **VA**

Also in *Industrial engineering and engineering digest,* New York, v. 13, Jan., 1913, p. 1–4, *VA.*

815. Moncrieff, V. J. System in the engineering department. (Horseless age, New York. v. 32, July 2, 1913, p. 35–38.) † **TOL**

Discusses characteristics needed in the systems used in automobile plants.

816. Morrison, C. J. Piece rate versus bonus. (American machinist, New York. v. 36, Feb. 1, 1912, p. 178.) †† **VFA**

Neither method pays all the saving to the workmen but the bonus system gives the workmen a larger percentage.

817. Moses, Percival Robert. Scientific management in isolated plant operation. (Engineering magazine, New York. v. 44, Feb., 1913, p. 714–720.) **VDA**

Discusses the practical operation of efficiency principles in the power house.

1913, continued.

818. —— Scientific management in power-plant operation. (Engineering magazine, New York. v. 44, March, 1913, p. 885–893.) **VDA**

819. Muensterberg, Hugo. Psychology and industrial efficiency. Boston: Houghton Mifflin Co., 1913. 4 p.l., vii(i), 320 p., 1 l. 8°. **TB**

The nature of the psychological problems involved and the indication of the method of approach to their solution are discussed.

820. Neuhaus, F. F. W. Taylors Grundsätze methodischer Anleitung bei Arbeitsvorgängen jeder Art. (Verein deutscher Ingenieure. Zeitschrift, Berlin. Bd. 57, March 8, 1913, p. 367–371.) † **VDA**

A brief outline of the Taylor ideas of scientific management.

821. A **New** development in factory study. (Industrial engineering and engineering digest, New York. v. 13, Feb., 1913, p. 58–61.) † **VA**

Describes the use of the route model as a method of investigation.

822. Nicholl, John S. A scientific cost keeping system for reinforced concrete. (Engineering magazine, New York. v. 44, Jan., 1913, p. 511–525.) **VDA**

823. L'Organisation scientifique du travail dans les usines, d'après le système Taylor. (Le Génie civil, Paris. v. 62, March 29, 1913, p. 430–432.) †† **VA**

824. Parkhurst, Frederic Augustus. Put your house in order. (American Foundry Association, Buffalo. v. 22, Oct., 1913, p. 221–230.) **Eng. Lib.**

Considers the science of management as applied to the foundry.

825. Passano, Edward Boteler. Measuring efficiency in manufacturing on a basis of profit, read at the regular monthly meeting of the American Society of Mechanical Engineers, Nov. 12, 1912. Baltimore: Williams & Wilkins Co., 1913. 14 p. 4°. **TM p.v.6, no.5**

Also printed in *Wood craft*, Cleveland, v. 18, Jan., 1913, p. 120–124, † *VMA*.

826. Perrigo, Oscar E. Real efficiency. What it is and how to attain it. (Southern machinery, Atlanta. v. 29, March, 1913, p. 185–187.) † **VFA**

827. Pollard, Seabury G. Efficiency in the pumping station. (Municipal engineering, Indianapolis. v. 44, May, 1913, p. 405–407.) **VDA**

828. Polakov, Walter N. Task setting for firemen and maintaining high efficiency in boiler plants. (American Society of Mechanical Engineers. Journal, New York. v. 35, Dec., 1913, p. 1729–1769.) **VFA**

829. Polakov, Walter N., and L. G. **Hammer.** What is efficiency. (Cassier's magazine, New York. v. 44, July, 1913, p. 82–86.) **VDA**

Discusses present-day efficiency methods and the real purposes of efficiency engineering.

830. Porter, H. F. J. Teaching scientific management in the technical schools. (Southern machinery, Atlanta. v. 29, Feb., 1913, p. 122–123.) † **VFA**

831. Power, Le Grand. The effect of governmental efficiency upon efficiency in industry. (Efficiency Society. Journal, New York. v. 3, July, 1913, p. 39–47.) † **TMA**

Remarks on government accounting and the importance of efficiency that will benefit the masses.

832. Preen, Harvey. Reorganization and costings. A book for manufacturers and merchants. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. [1913.] viii. 188 p. new ed. 12°. **TM**

833. Production efficiency in typewriter building. (Iron age, New York. v. 91, Jan. 2, 1913, p. 64–70.) †† **VDA**

Methods developed by the Oliver Typewriter Company at their factory at Woodstock, Ill., for manufacturing, assembling, etc. Also describes the employees' organizations.

834. Quincy, A. B. The industrial need of technically trained men. (Scientific American, New York. v. 109, July 12, 1913, p. 42.) †† **VA**

A variety of avenues open to the young man of to-day.

835. The **Relationship** of scientific management to labor. (Journal of political economy, Chicago. v. 21, May, 1913, p. 400–411.) **TAA**

836. Rice, David E. The industrial need of technically trained men. (Scientific American, New York. v. 109, Aug. 9, 1913, p. 116–117.) †† **VA**

A study of incomes of technically trained men.

837. Ritchie, John, jr. The industrial need of technically trained men. (Scientific American, New York. v. 108, June 14, 1913, p. 548.) †† **VA**

Why there is place in business for men technically trained.

838. Roberts, T. C. Organization. An outline of essentials from engineering practice. (Metallurgical and chemical engineering. v. 11, Feb., 1913, p. 95–97.) **VIA**

839. Saunders, W. L. Factory organization and administration. (Engineering magazine, New York. v. 46, Nov., 1913, p. 257–260.) **VDA**

"Abstracts from addresses delivered before the Graduate School of Business Administration, Harvard University."

840. Schlesinger, G. Practical and scientific management. (Industrial engineer-

1913, continued.

ing and engineering digest, New York. v. 13, Sept., 1913, p. 376–380.) **VA**

The Taylor system from the viewpoint of a German engineer.

841. Schulze, J. William. The American office; its organization, management and records. New York: Key Pub. Co. [1913.] 380 p., 2 pl. 8°. **TM**

842. Scope of scientific management. (Electric railway journal, New York. v. 41, March 15, 1913, p. 451.) †† **TPB**

An editorial.

843. Seabrook, A. Hugh. The management of public electric supply undertakings. New York: McGraw-Hill Book Co., Inc., 1913. 3 p.l., 192 p., 6 tables. 8°. **TM**

844. Selfridge, Susan K. The need of efficiency methods in the management of a laundry. (Efficiency Society. Journal, New York. v. 3, July, 1913, p. 83–86.) † **TMA**

845. Smith, W. Richmond. Efficiency in city purchasing. (National municipal review, Baltimore. v. 2, April, 1913, p. 239–250.) **SERA**

846. Snyder, Wilson E. The technical man and the steel works. (Engineers' Society of Western Pennsylvania. Proceedings, Pittsburgh. v. 29, March, 1913. p. 63–84.) **VDA**

A discussion of methods aiming at the improvement of the operating personnel.

847. Spaulding, F. E. Application of the principles of scientific management [to school systems]. (National Education Association. Journal of proceedings and addresses. Ann Arbor, Mich., 1913. 1913, p. 259–279.) **SSA**

848. Steele, F. R. C. The development of systems of control. (Journal of accountancy, New York. v. 16, Oct., 1913, p. 280–290.) **TMA**

The tendency toward intensified production calls for a development in the science of accounting so that executives may at any time know what is the condition of the business.

849. Stelzle, Charles. Efficiency in church work. (Efficiency Society. Journal, New York. v. 3, Dec., 1913, p. 58–64.) † **TMA**

850. Swartz, A. Some notes on the scientific management of labor in railway maintenance of way departments. (Engineering and contracting, Chicago. v. 39, April 16, 1913, p. 430–431.) † **VDA**

Suggestions for efficient work.

851. Talbot, Winthrop. The human element in industry. Economies of proper attention to shop hygiene through a service department. Approved methods of ventilation. Importance of the shop physician. (Iron age, New York. v. 91, Feb. 6, 1913, p. 366–369, Feb. 13, p. 418–420.) †† **VDA**

Abstract printed in the *Engineering magazine*, New York, v. 45, April, 1913, p. 94–97, *VDA*.

A medical viewpoint on human conservation in the factory.

852. Taylor, Frederick Winslow. The principles of scientific management. (Applied science, Toronto. v. 25, Jan., 1913, p. 76–82.) **VA**

An explanation of scientific management and its principles.

853. Thompson, Clarence Bertrand. Relation of scientific management to the wage problem. (Journal of political economy, Chicago. v. 21, July, 1913, p. 630–642.) **TAA**

Reprinted in his *Scientific management*, p. 706–719, *TM*.

854. —— Scientific management and the wage problem. (Industrial engineering and engineering digest, New York. v. 13, Oct., 1913, p. 430–433.) **VA**

The history of the wage systems — a logical attitude for labor unions.

855. Thompson, Sanford E. Time study and task work. (Industrial engineering and engineering digest, New York. v. 13, Aug., 1913, p. 347–350.) † **VA**

An explanation of the methods of scientific time study for rate fixing.

856. —— Time study and task work explained. (Iron age, New York. v. 91, April 24, 1913, p. 1010–1012.) †† **VDA**

Explains what time studies attempt to establish and the object of scientific methods.

857. Tinker, J. H. Shop output. (Railway master mechanic, Chicago. v. 37, Dec., 1913, p. 568–570.) **TPB**

A discussion of shop efficiency, giving a synopsis of the movement of an engine through the shops.

858. Tissington, F. Svstem for the drafting office, pattern shop and foundry. (Machinery, New York. v. 19, July, 1913, p. 877–879.) †† **VFA**

Outlines methods of management that save time and eliminate mistakes.

859. Valentine, A. L. An effective follow up system. (Machinery, New York. v. 19, Aug., 1913, p. 925–930.) †† **VFA**

Explains a system for recording the progress of small manufactured parts.

860. Waldron, Frederick A. Factors of scientific management other than labor problems. (Southern machinery, Atlanta. v. 29, Feb., 1913, p. 115–116.) † **VFA**

Also printed in *Wood craft*, Cleveland, v. 18, March, 1913, p. 180–182, † *VMA*.

861. Walker, Amasa. Scientific management applied to commercial enterprises. (Journal of political economy, Chicago. v. 21, May, 1913, p. 388–399.) **TAA**

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862. Ward, A. C. The purchasing department of a manufacturing organization. (Engineering magazine, New York. v. 46, Dec., 1913, p. 348–355.) **VDA**

863. Welch, Alden W. A practical method for following up construction work. (Engineering magazine, New York. v. 45, July – Aug., 1913, p. 512–517, 674–682.) **VDA**

Applicable to industrial construction generally as concerns buildings.

864. Weldin, William Archie. Scientific management. (Mines and minerals, Scranton, Pa. v. 33, May, 1913, p. 553–554.) †† **VHA**

Discusses the possibilities of its application to coal mining.

865. Wirz, Wilhelm. Taylors Betriebssystem. (Zeitschrift für Handelswissenschaft und Handelspraxis, Leipzig. Jahrg. 6, Aug., 1913, p. 133–144.) **TLA**

866. Woods, Clinton Edgar. Organizing a factory. Chicago: A. W. Shaw Co., 1913. 190 p. 12°. (Business man's library. v. 6.) **TM**

867. Yeomans, Lucian I. Factory efficiency. (Boiler maker, New York. v. 13, Sept., 1913, p. 295–297.) † **VFA**

Discusses the essential elements of factory efficiency.

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868. Allingham, H. W. Notes on shop management. (Efficiency Society. Journal, New York. v. 3, Feb., 1914, p. 47–66.) † **TMA**

869. Aluminum Casting Co. Scientific management in a foundry. (Iron age, New York. v. 94, Sept. 3, 1914, p. 523–531.) †† **VDA**

Interesting system which with bonus wage payments has resulted in a remarkable cutting of costs.

870. Applying motion study to the molder. (Industrial engineering and the engineering digest, New York. v. 14, Nov., 1914, p. 423–426.) † **VA**

Bench devised which cuts down motion and increases output.

871. Arnold, Horace Lucien, and Fay L. Faurote. Ford methods and the Ford shops. (Engineering magazine, New York. v. 47, April – Sept., 1914, p. 1–26, 179–203, 331–358, 507–532, 667–692, 857–886; v. 48, Oct., 1914 – March, 1915, p. 33–60, 187–212, 338–366, 524–550, 704–721, 859–876; v. 49, April – June, 1915, p. 67–87, 184–201, 372–393.) **VDA**

872. Auel, Carl Bennett. Standardization in the factory. (Industrial engineering and engineering digest, New York. v. 14, Dec., 1914, p. 458–460.) **VA**

Will reduce the cost of operation. This applies to parts, methods, drawings, specifications and shop processes.

873. Babcock, George D. Making an efficient plant more efficient. (Industrial engineering and engineering digest, New York. v. 14, June – July, 1914, p. 228–233, 275–283.) **VA**

Details the steps taken and the methods used to achieve wonderful results in an already efficient factory.

874. —— Results of applied scientific management. (Iron age, New York. v. 93, June 4, 1914, p. 1402–1404, June 11, p. 1454–1455, June 18, p. 1512–1513, June 25, p. 1572–1574; v. 94, July 2, 1914, p. 14–16, July 9, p. 90–91, July 16, p. 134–135.) † **VDA**

Abstract in *American machinist,* New York, v. 40, June 18, 1914, p. 1063–1068, † *VFA.*

A report of four years of the Taylor system at Syracuse plant. A paper read before the National Metal Trades Association, Worcester, Mass., April 22, 1914.

875. —— Routing-schedule and despatch. (Industrial engineering and engineering digest, New York. v. 14, Nov., 1914, p. 427–431.) **VA**

An analysis of those factors which affect the prompt passage of work through the factory and a discussion of the methods used by the H. H. Franklin Co.

876. Babson, Roger Ward. Rating men. (Efficiency Society. Journal, New York. v. 3, Feb., 1914, p. 32–45.) † **TMA**

877. Barker, Sir John. Meeting emergencies in business. illus. (System, London. v. 26, 1914, p. 435–439.) **TMA**

878. Batey, John. The science of works management. London: Scott Greenwood & Son, 1914. viii, 223 p. 12°. (The Broadway series of engineering handbooks. v. 12.) **TM**

879. Bender, Carl. Ein Beitrag zur Frage wirtschaftlicher Ausnutzung vorhandener Werkstattseinrichtungen nach amerikanischem Muster. Leipzig: O. Politzky, 1914. 73(1) p., 1 diagr. illus. 8°. **VFG**

880. Bennett, George L. A method of determining or fixing time for the performance of city contracts for street-improvements. (The Municipal Engineers of the City of New York. Paper no. 86, Feb. 25, 1914, p. 5–35.) **VDA**

Abstract in *Engineering and contracting,* Chicago, v. 41, May 13, 1914, p. 555–557, † *VDA.*

Discusses a method of work with special application to grading.

881. Blackford, Katherine M. Huntsinger. Rating men. (Efficiency Society. Journal, New York. v. 3, March, 1914, p. 4–17.) † **TMA**

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882. Blackford, Katherine M. Huntsinger, and ARTHUR NEWCOMB. The job, the man, the boss. Illustrated from photographs. Garden City, New York: Doubleday, Page & Co., 1914. xvii, 266 p., 1 l., 12 pl., 12 ports. 8°. **TDH**

883. Blumenthal, Gustav. Efficiency for whom? (Efficiency Society. Journal, New York. v. 3, March, 1914, p. 45–49.) † **TMA**

884. Brinton, Willard C. Graphic methods of presenting data. (Engineering magazine. New York. v. 47, Aug. – Sept., 1914, p. 651–666, 817–829; v. 48, Oct., 1914 – Jan., 1915, p. 73–85, 229–241, 396–406, 551–568.) **VDA**

885. Brisco, Norris Arthur. Economics of efficiency. New York: The Macmillan Company, 1914. xv, 385 p. 12°. **TM**

With bibliographies at the end of each chapter.

886. Brockwell, H. E. Scientific management as applied to the telephone business. (Telephony, Chicago. v. 67, Oct. 3, 1914, p. 26–27.) †† **TTA**

Results of the application of efficiency methods.

887. Brown, H. W. Scientific management in the sales department. (Society to Promote the Science of Management. Bulletin, Hanover, N. H. v. 1, Dec., 1914, p. 3–4.) **TMA**

888. Burnett, L. H. Social service as a factor in good management. (Industrial engineering and engineering digest, New York. v. 14, Oct., 1914, p. 391–392.) **VA**

889. Burroughs, A. M. Handling employees so as to minimize costs. (Metal worker, New York. v. 82, Dec. 18, 1914, p. 790–793, 802.) **VIA**

Analysis of various methods which are employed and discussion of their relative merits.

890. Bursley, Joseph A. The influence of scientific management on wages and modern wage systems. (Efficiency Society. Journal, New York. v. 3, Oct., 1914, p. 9–18.) † **TMA**

891. Business management. [Articles by John Wanamaker, F. A. Delano, C. S. Funk, and others.] Chicago: A. W. Shaw Co. [1914.] 198 p., 1 port. 12°. (Library of business practice. v. 1.) **TM**

892. Buying and selling. [Articles by C. D. Murphy, E. P. Ripley and others.] Chicago: A. W. Shaw Co. [1914.] 200 p. illus. 12°. (Library of business practice. v. 3.) **TM**

893. Cadbury, Edward. Some principles of industrial organisation. [With discussion.] (Sociological review, London. v. 7, April, 1914, p. 99–125, Oct., p. 327–331.) **SA**

894. Casson, Herbert Newton. Personal efficiency. (Efficiency Society. Journal, New York. v. 3, Jan., 1914, p. 67–74.) † **TMA**

895. Child, Georgie Boynton. The efficient kitchen; definite directions for the planning, arranging and equipping of the modern labor-saving kitchen. A practical handbook for the home maker. Edited and arranged by Louise Boynton. New York: McBride, Nast & Co., 1914. xiii p., 3 l., 242 p., 8 pl. 12°. **VSB**

Based on the work of the Housekeeping Experiment Station, Stamford, Conn. Excellent discussion of methods and equipment.

896. Church, Alexander Hamilton. The science and practise of management. New York: The Engineering Magazine Company, 1914. 2 p.l., iii–xviii p., 1 l., 535 p. illus. 12°. (Works management library.) **TM**

897. —— The scientific basis of manufacturing management. (Efficiency Society. Journal, New York. v. 3, Feb., 1914, p. 8–15.) † **TMA**

898. —— What are principles of management? (Efficiency Society. Journal, New York. v. 3, Feb., 1914, p. 16–18.) † **TMA**

Mr. Taylor's and Mr. Emerson's principles.

899. Clark, Neil M. Efficiency in loose leaf accounting. (System, London. v. 26, Nov. – Dec., 1914, p. 397–400, 489–495; v. 27, Jan. – May, 1915, p. 39–43, 127–131, 225–228, 299–302, 381–384.) **TMA**

900. Classification by routine and technique. A mnemonic symbol system for classifying knowledge of scientific management. (Efficiency Society. Journal, New York. v. 3, Jan., 1914, p. 15–24.) † **TMA**

901. Crozier, William. Scientific management between two fires. (Efficiency Society. Journal, New York. v. 3, March, 1914, p. 18–24.) † **TMA**

902. Day, Charles. Management principles and the consulting engineer. (In: C. B. Thompson, Scientific management. Cambridge, 1914. p. 203–216.) **TM**

903. Drury, Horace Bookwalter. Organized labor and scientific management. (Industrial engineering and engineering digest, New York. v. 14, March – May, 1914, p. 99–101, 145–149, 191–197.) **VA**

Reprinted in the *Journal* of the Efficiency Society, v. 3, March, 1914, p. 61–71, April, p. 28–43, *TMA*.

904. Efficiency engineering in the shops of the Milwaukee Electric Railway. An account of the shop practices and accounting methods employed in conjunction with the operation of the planning department and premium system of paying shop employees. (Electric railway journal, New York. v. 43, March 21, 1914, p. 631–637.) **TPB**

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905. The **Efficiency** of grinding operations. (Industrial engineering and engineering digest, New York. v. 14, April, 1914, p. 140–142.) **VA**

Many factors besides the grinding wheel enter into an efficient grinding operation — not the least of these are the spirit of the employer and the ability of the employee.

906. Elbourne, Edward T. Factory administration and accounts; a book of reference ...for managers, engineers and accountants. With contributions on the general problem of industrial works design, by Andrew Home-Morton, and financial accounts by John Maughfling. London: Longmans, Green, & Co., 1914. xv(i), 638 p. 8°. **TM**

907. Emerson, Harrington. Efficiency and the new tariff: how scientific management enables America to compete with cheap European labor. (Scientific American supplement, New York. v. 77, Feb. 21, 1914, p. 122–123.) †† **VA**

908. Fletcher, W. B. The first problem in management. (System, London. v. 25, June, 1914, p. 483–487.) **TMA**

909. Franklin, Benjamin Alvey. Reducing the factory expense. (Engineering magazine, New York. v. 46, Jan., 1914, p. 530–538.) **VDA**

910. Fréminville, Charles de. Le système Taylor. (Société d'encouragement pour l'industrie nationale. Bulletin, Paris. v. 121, Jan. 13, 1914, p. 280–301.) **VA**

Abstract in *Le Génie civil,* Paris, v. 64, Jan. 24, 1914, p. 250–254, †† *VA.*

An unbiased study of the principles and results of scientific management from a detailed investigation of the Taylor system.

911. —— Le système Taylor et l'organisation scientifique du travail dans les ateliers. [With discussion.] (Réforme sociale, Paris. série 7, tome 7 [tome 67], March 1, 1914, p. 317–344, 403–409.) **SA**

912. Fuchs, H. Die amerikanische Literatur über "Scientific Management" (wissenschaftliche Betriebsführung). (Rundschau für Technik und Wirtschaft, Wien. Jahrg. 7, Dec. 25, 1914, p. 265–269, Dec. 30, p. 281–287.) † **VA**

913. Gantt, Henry Laurence. Measuring efficiency. (American Society of Mechanical Engineers. Transactions, New York. v. 36, Dec., 1914, p. 417–429.) **VFA**

Abstracts in *Iron trade review,* Cleveland, v. 55, Dec. 17, 1914, p. 1131–1133, *VHA; Iron age,* New York, v. 94, Dec. 3, 1914, p. 1320–1321, † *VDA; Automobile,* New York, v. 31, Dec. 17, 1914, p. 1104–1105, † *TOL.*

914. —— The value of non-productive labor. (Industrial engineering and engineering digest, New York. v. 14, Dec., 1914, p. 463–465.) **VA**

A low non-productive labor expense is not a criterion of high efficiency in the factory; on the contrary, it usually indicates inefficiency.

915. Gilbreth, Lillian Moller. The psychology of management. The function of the mind in determining, teaching, and installing methods of least waste. New York: Sturgis & Walton Co., 1914. 6 p.l., 344 p. 8°. **TM**

916. Good order — safety — efficiency. (Industrial engineering and engineering digest, New York. v. 14, March, 1914, p. 95–98.) **VA**

Tells how good order increased the safety and efficiency of foundries.

917. Green, Harold L. Building factor costs. (Engineering magazine, New York. v. 48, Dec., 1914, p. 407–410.) **VDA**

Mr. Green's figures and discussion are based upon the "production factor" method of expense distribution described by A. H. Church in "Production factors in cost accounting and works management."

918. Hard, William. What constitutes a fair day's work. (System, London. v. 25, April, 1914, p. 298–306.) **TMA**

The reason why workmen tire, the effect that rest has upon the worker's productive capacity and relations between kinds of labor and output.

919. Harrington, C. A. Mill inspection methods. (Engineering magazine, New York. v. 47, May, 1914, p. 172–178.) **VDA**

Suggests principles and a code of practice under which the maximum advantage of skilled and sensible inspection will be obtained by all parties at interest.

920. Heiss, Clemens. Das Taylorsystem. (Schmollers Jahrbuch für Gesetzgebung, Verwaltung und Volkswirtschaft. München. Jahrg. 38, Heft 4, 1914, p. 183–239.) **SA**

921. How is your plant organized? (Efficiency Society. Journal, New York. v. 3, Jan., 1914, p. 44–66.) † **TMA**

An analysis of thirty-five plants which have representatives in the Efficiency Society.

922. Hugins, Roland. The effect of scientific management on wages. (South Atlantic quarterly, Durham, N. C. v. 13, Jan., 1914, p. 51–68.) * **DA**

923. Hutchins, F. Lincoln. Scientific management. (In: C. B. Thompson, Scientific management. Cambridge, 1914. p. 632–635.) **TM**

924. An **Important** development. Increasing the efficiency of factory telephone service. (Engineering magazine, New York. v. 47, April, 1914, p. i–ii.) **VDA**

925. Industrial organization. [Articles by W. C. Redfield, Hugo Diemer, and others.] Chicago: A. W. Shaw Co., 1914. 200 p. illus. 12°. (Library of business practice. v. 2.) **TM**

1914, continued.

926. Jones, Edward David. The administrator as diplomat. (Engineering magazine, New York. v. 47, Aug.–Sept., 1914, p. 715–723, 842–848; v. 48, Oct., 1914, p. 23–32.) **VDA**

Three papers concluding his series on the administrator as a general and scientist.

927. —— The administrator as scientist. (Engineering magazine, New York. v. 47, May–July, 1914, p. 163–171, 370–376, 491–497.) **VDA**

"Studies of great scientists to find their methods of work and apply them to present business conditions."

928. —— The relation of education to industrial efficiency: the study of general principles of administration. (American Economic Association. Papers and proceedings of the 26th annual meeting, 1914, p. 209–233.) **TB**

Issued as a supplement to v. 5, no. 1, March, 1915, of the *American economic review.*

929. Kennedy, R. E., and J. C. Pendleton. Elimination of waste motion in bench molding. (American Foundrymen's Association. Transactions, Cleveland. v. 23, Sept., 1914, p. 311–322.) **VIA**

Abstract in *Iron age,* New York, v. 94, Sept. 17, 1914, p. 662–664, † *VDA.*

How cost and time may be reduced with little money expenditure. Study made of bench molding.

930. Kent, Robert Thurston. Cutting costs in factory transportation. (Industrial engineering and engineering digest, New York. v. 14, Feb., April, Aug., 1914, p. 55–58, 133–138, 315–323.) **VA**

The expense of manufacture in any business can be much decreased if a systematic study is made of the subject of transportation.

931. —— Keeping track of routine duties in the shop. (Industrial engineering and engineering digest, New York. v. 14, Jan., 1914, p. 10–14.) **VA**

The tickler file and note book form an "automatic memory" which never fails.

932. —— Providing a supply of skilled workers for the shop. (Industrial engineering and engineering digest, New York. v. 14, July, 1914, p. 265–270.) **VA**

Modern methods of training workmen give a better product than the old-time apprentice system ever turned out.

933. —— Scientific management and the labor problem. (Industrial engineering and engineering digest, New York. v. 14, Nov., 1914, p. 418–421.) **VA**

Scientific management offers the only permanent solution to the differences between capital and labor, because it gives each side of the controversy exactly what they most desire.

934. Kent, William. Investigating an industry; a scientific diagnosis of the diseases of management. With an introduction by H. L. Gantt. New York: J. Wiley & Sons, 1914. xi, 126 p. 12°. **TM**

A detailed account of the methods followed in examining the general organization, production plant, and sales department of a hypothetically sick factory.

935. —— Making the cost department worth while. (Industrial engineering and engineering digest, New York. v. 14, Oct., 1914, p. 393–394.) **VA**

The cost department is often made to cost more than it should. What must be done to make it reduce operating expenses in all departments, including itself.

936. Kimball, Dexter Simpson. Another side of efficiency engineering. (In: C. B. Thompson, Scientific management. Cambridge, 1914. p. 734–740.) **TM**

937. Kirk, C. J. Scientific management and the bonus system as applied to pottery manufacture. (American Ceramic Society. Transactions, Columbus, O. v. 16, Feb., 1914, p. 264–272.) **VNE**

938. Knoeppel, Charles Edward. Determining a fair standard. (Efficiency Society. Journal, New York. v. 3, Jan., 1914, p. 25–43.) † **TMA**

The especially new feature is the development of the methods for assigning proper periods of rest in standard tasks.

939. —— How to make your time studies accurately. (Foundry, New York. v. 42, May, 1914, p. 169–174.) **VIA**

Discusses time study and its use, outlining a plan and its application to foundry work.

940. Kochmann, Wilhelm. Das Taylorsystem und seine volkswirtschaftliche Bedeutung. (Archiv für Sozialwissenschaft und Sozialpolitik, Tübingen. Bd. 38, Heft 2, March, 1914, p. 391–424.) **SA**

941. Laine, William B. Arrangement and operation of store rooms. (Industrial engineering and engineering digest, New York. v. 14, Feb., 1914, p. 45–48.) **VA**

Systematic care of the store room decreases the amount of stock to be carried and releases that much capital.

942. Lauffer, Adolf. Die moderne Betriebsorganisation in mittleren Maschinenfabriken und ihre Einführung. Leipzig: Max Jänicke, 1914. viii, 191 p. 12°. (Bibliothek der gesamten Technik. Bd. 227.) **VFG**

943. Le Chatelier, Henri. Introduction to the French translation of F. W. Taylor's *The principles of scientific management.* (In C. B. Thompson, Scientific management. Cambridge, 1914. p. 842–859.) **TM**

944. —— Organisation du travail. Le système Taylor. (Société d'encouragement pour l'industrie nationale. Bulletin, Paris. année 113, tome 121, March, 1914, p. 280–331.) **VA**

1914, continued.

945. —— Le système Taylor. (Société d'encouragement pour l'industrie nationale. Bulletin, Paris. v. 121, March, 1914, p. 302–331.) **VA**

Abstract in *Revue industrielle*, Paris, v. 45, March 21, 1914, p. 153–155, March 28, p. 169–171, *VA*.

946. **Lederer,** E. Die ökonomische und sozialpolitische Bedeutung des Taylorsystems. (Archiv für Sozialwissenschaft und Sozialpolitik, Tübingen. Bd. 38, Heft 3, May, 1914, p. 769–784.) **SA**

947. **Lilienthal,** J. Fabrikorganisation, Fabrikbuchführung und Selbstkostenberechnung der Firma Ludw. Loewe & Co. mit Genehmigung der Direktion zusammengestellt und erläutert von J. Lilienthal. Mit einem Vorwort von G. Schlesinger. Berlin: J. Springer, 1914. xi, 245(1) p. 2. ed. 4°. **TM**

948. **Meyer,** Ernst. Taylorsystem und Arbeiterschaft. (Neue Zeit, Stuttgart. Jahrg. 32, Bd. 2, June 12, 1914, p. 480–486.) *** DF**

949. **Meyers,** C. J. Science of management. (In: C. B. Thompson, Scientific management. Cambridge, 1914. p. 132–152.) **TM**

950. **Minich,** H. D. Francis Bacon, efficiency engineer. (Engineering magazine, New York. v. 47, Aug., 1914, p. 733–736.) **VDA**

951. **Minimizing** movements in the foundry. (Industrial engineering and engineering digest, New York. v. 14, June, 1914, p. 234–236.) **VA**

Shows how a foundry whose output is large decreased the handling of sand, iron, and castings by an intelligent study and use of modern methods.

952. **Morrison,** Charles J. Short-sighted methods in dealing with labor. (Engineering magazine, New York. v. 46, Jan., 1914, p. 566–570.) **VDA**

Shows that demands made by labor unions often benefit employer.

953. **Mowery,** H. W. Slipping as an industrial hazard. (Engineering magazine, New York. v. 47, Nov., 1914, p. 259–262.) **VDA**

"Some common dangers and means of preventing them."

954. **Myers,** David Moffat. Preventable losses in factory power plants. (Engineering magazine, New York. v. 46, Feb.–March, 1914, p. 753–759, 903–912; v. 47, April–Sept., 1914, p. 38–48, 232–240, 377–384, 552–562, 724–733, 887–894; v. 48, Oct.–Nov., 1914, p. 61–73, 242–255.) **VDA**

Designed to be of practical service to owners and operators of industrial power plants.

955. **Parkhurst,** Frederic Augustus. The preliminary steps for efficient management. (Industrial engineering and engineering digest, New York. v. 14, Jan., 1914, p. 25–29.) **VA**

The owner of the business has responsibilities, as well as the engineer. Each must do his part if good management is to result.

956. —— Scientific management in the foundry. (American Foundrymen's Association. Transactions, Cleveland. v. 23, Sept., 1914, p. 156–291.) **VIA**

957. **Pendleton,** J. C., and R. E. Kennedy. The value of saving seconds in the foundry. The application of time study and analysis in reducing the costs of bench molding operations. (Foundry, Cleveland. v. 42, Sept., 1914, p. 347–352.) **VIA**

958. **Polakov,** Walter N. Improving the efficiency in the fire room. (Industrial engineering and engineering digest, New York. v. 14, Feb., 1914, p. 59–63.) † **VA**

It is possible to set a task for a fireman the same as for a machinist. This was done at the Warrior Ridge power station with a resulting decrease of 25 per cent. in coal consumption.

959. **Pouget,** Émile. L'organisation du surmenage. (Le système Taylor.) Paris: M. Rivière et Cie., 1914. 70 p., 1 l. 12°. (Bibliothèque du mouvement prolétarien. v. 15.) **SFC**

960. The **Practical** working of scientific management. (Industrial engineering and engineering digest, New York. v. 14, June, 1914, p. 224–227.) † **VA**

Presents statistics furnished by the workmen themselves showing increases of wages, of products and of general benefit to employer and employee.

961. **Prentiss,** F. L. A departure in industrial management. (Iron age, New York. v. 94, July 2, 1914, p. 1–2.) †† **VDA**

Responsible employees of Cleveland Hardware Co. form, with officers, a body of working stockholders who meet to discuss shop problems.

962. **Revising** the lighting system to increase production. (Industrial engineering and engineering digest, New York. v. 14, Aug.–Sept., 1914, p. 310–314, 361–366.) **VA**

A properly designed illumination has a direct effect on the quantity and cost of production. The illumination requirements for different processes in several industries are given here.

963. **Riehl,** Frank G. The "dial method" of reducing machine production costs. (Engineering magazine, New York. v. 46, Feb., 1914, p. 739–752.) **VDA**

964. **Roe,** Joseph W. Better relations between the worker and executive. (Industrial engineering and engineering digest, New York. v. 14, Aug., 1914, p. 324–326.) **VA**

Description of an experiment in social service which gave both workmen and their future superior officers a mutual understanding of the lives and ideas of the other, and which resulted in a higher efficiency for both.

1914, continued.

965. Rowsbar, Seymour W. Results accomplished by scientific management. (Foundry, Cleveland. v. 42, Nov.–Dec., 1914, p. 458–462, 498–500.) **VIA**

Efficiency in the plating department.

966. Running a business in panic times. (Industrial engineering and engineering digest, New York. v. 14, Oct., 1914, p. 397–400.) **VA**

A study of the problem of how to reduce the expenses of a manufacturing plant in times of business depression without making too great a sacrifice in efficiency.

967. Sanitation — a method of improving production. (Industrial engineering and engineering digest, New York. v. 14, Jan., 1914, p. 1–7.) **VA**

The efficiency of workers in every industry is decreased by unsanitary conditions.

968. Schneider, A. J. Routing work with a minimum of labor. (Industrial engineering and engineering digest, New York. v. 14, Aug., 1914, p. 339–341.) **VA**

The production system of the Cincinnati Planer Co., by means of which the location of any order at any time can be ascertained with but little effort.

969. The **Scientific** handling of salesmen. (Industrial engineering and engineering digest, New York. v. 14, Oct., 1914, p. 385–391.) † **VA**

A description of how some of the methods of the Taylor system have been applied to the work of the sales department with the same success as has been obtained in the shop.

970. Scientific manhandling. (Independent, New York. v. 79, July 13, 1914, p. 72.) * **DA**

971. Scovell, Clinton H. Finding out about factory profits. (Industrial engineering and engineering digest, New York. v. 14, June, 1914, p. 246–250.) **VA**

The machine hour method of cost accounting enables the manufacturer to know how much it cost him to make each item of his product and how much he lost by idle machinery.

972. Setting a schedule for the factory. (Industrial engineering and engineering digest, New York. v. 14, March, 1914, p. 89–94.) **VA**

Outlines a method by which this can be done.

973. Seubert, Rudolf. Aus der Praxis des Taylor-Systems, mit eingehender Beschreibung seiner Anwendung bei der Tabor Manufacturing Company in Philadelphia. Berlin: J. Springer, 1914. vi p., 1 l., 156 p., 1 table. illus. 8°. **TM**

974. Spence, J. C. How may we and our men earn more money? (Industrial engineering and engineering digest, New York. v. 14, June, 1914, p. 239–241.) **VA**

Enlist the enthusiasm and co-operation of men and foremen by making them sharers in the profits due to improved methods.

975. Steele, John. Developing a department store. (System, London. v. 25, Jan., 1914, p. 129–135.) **TMA**

The policy followed by a well-established draper, whose system of organisation resulted in a steady expansion of business.

976. Stowers, George F. Navy yard management. Would the appointment of civilian general managers for industrial navy yards tend to increase military and industrial efficiency and economy? (Efficiency Society. Journal, New York. v. 3, Dec., 1914, p. 7–24.) † **TMA**

977. Tabor, William H. Teaching scientific management in the college. (Industrial engineering and engineering digest, New York. v. 14, July, 1914, p. 287–288.) **VA**

A description of how the engineering students at Pennsylvania State College are instructed in time study, routing and planning.

978. Taylor, Frederick Winslow. Competitive profit-sharing. (Efficiency Society. Journal, New York. v. 3, March, 1914, p. 25–32.) † **TMA**

979. —— Scientific management. (Efficiency Society. Journal, New York. v. 3, Sept., 1914, p. 13–35.) † **TMA**

980. —— Scientific management and labor unions. (Society to Promote Scientific Management. Bulletin, Hanover, N. H. v. 1, Dec., 1914, p. 3.) **TMA**

Abstract of address at Philadelphia, Oct. 24, 1914.

981. Thompson, Clarence Bertrand. Bibliography of scientific management. (In his: Scientific management. Cambridge, 1914. p. 863–878.) **TM**

982. —— The case for scientific management. (Sociological review, London. v. 7, Oct., 1914, p. 315–327.) **SA**

983. —— Classification and symbolization. (In his: Scientific management. Cambridge, Mass., 1914. p. 461–519.) **TM**

Reprinted from *System,* v. 22, p. 588–594; v. 23, p. 21–27, 131–137, 260–266, 386–389, 586–592, *TMA.*

I. Giving a business a memory. II. Memory tags for business facts. III. Taking factory costs apart. IV. Listing stocks to index wastes. V. Keeping tab on finished parts. VI. Right filing and easy finding.

984. —— The literature of scientific management. (Quarterly journal of economics, Cambridge, Mass. v. 28, May, 1914, p. 506–557.) **TAA**

985. —— Scientific management: a collection of the more significant articles describing the Taylor system of management. Cambridge: Harvard University Press, 1914. xii, 878 p. 8°. (Harvard business studies. v. 1.) **TM**

Includes the cream of the literature on the subject (outside of the standard works of Taylor and Gantt), selected and edited from periodicals and books, many of which are now out of print or otherwise unobtainable.

1914, continued.

986. —— Scientific management in a retail store. (System, Chicago. v. 26, Nov., 1914, p. 568–575.) **TMA**

How the principles proved in factories can be applied by merchants.

987. Thompson, Sanford E. A study of cleaning filter sands with no opportunity for bonus payments. (American Society of Mechanical Engineers. Transactions, New York. v. 36, Dec., 1914, p. 693–706.) **VFA**

Abstracts in *Engineering record,* New York, v. 70, Dec. 5, 1914, p. 608–609, † *VDA,* and in *Engineering and contracting,* Chicago, v. 42, Dec. 23, 1914, p. 579–581, *VDA.*

Output of force was increased 15 per cent. in spite of fact that city ordinances prohibited bonuses for excess work.

988. Time keeping that keeps time. (Industrial engineering and engineering digest, New York. v. 14, April, 1914, p. 150–151.) **VA**

Describes a system that is flexible, accurate and rapid.

989. Tipper, Harry. The new business. Garden City, N. Y.: Doubleday, Page & Co. for the Associated Advertising Clubs of the World, 1914. xv, 391(1) p. illus. 8°. **TM**

990. United States. — Labor Committee (House). "Taylor system" of shop management. Report. Sept. 30, 1914. [Washington: Gov. Prtg. Off., 1914.] 13 p. 8°. (U. S. 63. cong., 2. sess. H. rept. no. 1175; serial 6560.) * **SBE**

991. Wade, Eskholme. A square deal between master and men. How the Ford Motor Co. creates an army of highly specialised workmen and encourages thrift and ability. illus. (System, London. v. 26, Dec., 1914, p. 440–447.) **TMA**

992. Wallichs, A. Zeituntersuchungen in Giessereien. (Stahl und Eisen, Düsseldorf. Jahrg. 34, Feb. 26, 1914, p. 352–356.) † **VIA**

An abstract and discussion of the paper presented by C. E. Knoeppel before the American Foundrymen's Association.

993. Waldron, Frederick A. The basis of constructive management. (Industrial engineering and engineering digest, New York. v. 14, April, 1914, p. 155–157.) **VA**

Efficient plant operation is more dependent on the executives than on the men.

994. White, Herbert R. Records for the purchasing and supply department. (Engineering magazine, New York. v. 46, Jan., 1914, p. 571–576.) **VDA**

Shows a simple and convenient system from initial orders to final shop requirements.

995. Why is organized labor opposed to scientific management? (Industrial engineering and engineering digest, New York. v. 14, March, 1914, p. 120–121.) **VA**

When the workmen know more about it they will not oppose it.

996. Woodward, Stanley J. Systematising a factory. (System, London. v. 25, March, May–June, 1914, p. 272–275, 466–469, 563–569; v. 26, July, Sept., 1914, p. 44–48, 263–267.) **TMA**

Shows how a disorganized factory was placed on a correct and efficient basis.

1915

997. Ahsiuolh, N. H. Piece work and bonus systems in the boiler shop. (Railway age gazette, Mechanical ed., New York. v. 89, May, 1915, p. 240–242.) †† **TPB**

Efficiency systems and their working.

998. Alexander, Magnus W. Cost of hiring and firing men. (Engineering magazine, New York. v. 48, Feb., 1915, p. 733–736.) **VDA**

An investigation covering the employment and discharge of all classes of factory employees.

999. Allen, C. E. Greater agricultural efficiency for the Black Belt of Alabama. (American Academy of Political and Social Science. Annals, Philadelphia. v. 61, Sept., 1915, p. 187–198.) **SA**

A study of the possibilities of developing better agriculture in the Black Belt through better management.

1000. Archbald, Hugh. Efficiency as applied to mining. (Coal age, New York. v. 7, April 17, 1915, p. 675–678.) † **VHWA**

1001. Arena, O. Sui principii d'organizzazione scientifica del lavoro industriale. (Nuova antologia, Roma. serie 5, v. 179 [v. 263], Sept. 16, 1915, p. 266–277.) **NNA**

1002. Arnold, Horace Lucien, and F. L. Faurote. Ford methods and the Ford shops. New York: The Engineering Magazine Company, 1915. x, 440 p., 2 plans, 1 pl. illus. 4°. (Works management library.) **TON**

1003. Astle, Wilfred G. Efficiency in the stores department. (Electric railway journal, New York. v. 46, Oct. 30, 1915, p. 906–910.) † **TPB**

Location; systems; accounting, etc.

1004. —— Essentials of an engineering office organization. (Canadian engineer, Toronto. v. 28, May 27, 1915, p. 602–604.) †† **VDA**

1005. —— Handling stores according to the cash control idea. (Electrical review and western electrician, Chicago. v. 67, Dec. 4, 1915, p. 1012–1015.) **VGA**

1006. —— Storeroom organization and management. (Iron age, New York. v. 96, Aug. 26, 1915, p. 457–460.) †† **VDA**

Methods to be followed.

1915, continued.

1007. Auel, Carl Bennett. Results of factory standardization. (Iron trade review, Cleveland. v. 57, July 15, 1915, p. 125–130.) **VHA**

1008. —— System of factory dispatching. (American machinist, New York. v. 43, Dec. 30, 1915, p. 1155–1158.) † **VFA**

1009. Babcock, George D. Exact control of manufacture in practice. (Iron age, New York. v. 96, Dec. 16, 1915, p. 1410–1413.) † **VDA**

Applying scientific management discussed in the light of four years' experience. Strenuous effort required for introducing it well repaid.

1010. —— The executive's problem: an analysis of what is involved in different forms of management. (Iron age, New York. v. 96, Aug. 19, 1915, p. 419.) † **VDA**

Extract from address before the Employers' Association, Auburn, N. Y.

1011. Barba, W. P. Industrial safety and principles of management. (American Society of Mechanical Engineers. Journal, New York. v. 37, Dec., 1915, p. 692–695.) **VFA**

1012. Boomhower, Frederick K. Economies in the power plant. (Real estate magazine, New York. v. 5, Jan., 1915, p. 59–66.) **TEA**

1013. Brackett, George S. Efficiency in coal mining. (Colliery engineer, Scranton, Pa. v. 35, June, 1915, p. 588–592.) †† **VHA**

Method of obtaining same labor efficiency in large mines as in small ones.

1014. Brandeis, Louis Dembitz. Efficiency systems and labor. (Harper's weekly, New York. v. 59, Aug. 15, 1914, p. 154.) * **DA**

1015. Branne, John Severin. The economies of a manufacturing plant. (Association of Engineering Societies. Journal, St. Louis. v. 54, Feb., 1915, p. 53–62.) **VDA**

Features contributing to economy.

1016. A **Brief** on management. (Iron age, New York. v. 96, Nov. 4, 1915, p. 1065–1066.) † **VDA**

One expert's procedure in introducing scientific management. Common misconceptions.

1017. Brisco, Norris Arthur. Personal efficiency. (Efficiency Society. Journal, New York. v. 4, Sept., 1915, p. 18–32.) † **TMA**

1018. Business men to investigate the Taylor system. (Iron age, New York. v. 95, April 29, 1915, p. 954–955.) † **VDA**

1019. Calder, John. The human factors in engineering practice. (Stevens indicator, Hoboken, N. J. v. 32, July, 1915, p. 193–206.) **VDA**

Principles of good organization and executive success.

1020. —— System and its abuse. (Iron age, New York. v. 96, Nov. 4, 1915, p. 1043–1044.) † **VDA**

Danger that scientific method becomes the master and not the servant.

1021. Cartwright, O. G. Municipal administration and efficiency. (Efficiency Society. Journal, New York. v. 4, Dec., 1915, p. 20–31.) † **TMA**

1022. Chapman, Miner. Business efficiency and the human element. (Metal worker, plumber & steam fitter, New York. v. 84, July 16, 1915, p. 71–72.) † **VIA**

1023. Church, Alexander Hamilton. Industrial management. [With discussion.] (International Engineering Congress, San Francisco, 1915. Transactions: miscellany. San Francisco, 1916. p. 446–472.) **VDA**

1024. Coburn, Frederic G. How to use statistics in management. (Engineering magazine, New York. v. 49, Aug., 1915, p. 717–723.) **VDA**

Shows the importance of collecting facts: statistics of personnel — earnings, punctuality and attendance; statistics of materials and costs.

1025. Coes, Harold V. The rehabilitation of existing plants as a factor in production costs. (Engineering magazine, New York. v. 49, June – July, 1915, p. 357–371, 560–573.) **VDA**

Takes up question whether it is cheaper to remodel than to tear down and rebuild or move to new quarters.

1026. Collins, Francis W. Waste in the management of public utility power plants. (Engineering magazine, New York. v. 49, Sept., 1915, p. 888–893.) **VDA**

Calls particular attention to lack of records, ignorance concerning actual performance and output, and lack of adequate standards. Also discusses the relation of the human element to efficient operation, the placing of ultimate responsibility and prospects of governmental regulation.

1027. Concentrating units for efficiency. (Steel and iron, Pittsburgh. v. 49, Feb. 1, 1915, p. 148–149.) †† **VA**

Combination of plant equipment at Mansfield Sheet & Tinplate Co.'s new mill. Savings in cost of handling materials obtained.

1028. Construction cost keeping by the Mason City, Iowa, water department. (Engineering and contracting, Chicago. v. 44, Dec. 8, 1915, p. 446–447.) † **VA**

1029. Cooke, Morris Llewellyn. Casual and chronic unemployment. (American Academy of Political and Social Science. Annals, Philadelphia. v. 59, May, 1915, p. 194–199.) **SA**

1030. —— Rapport annuel de M. M. L. Cooke, directeur des travaux publics, adressé à M. Rudolph Blankenberg, maire de la ville de Philadelphie, sur les résultats de l'exercice 1913. (Revue de métallurgie, Paris. année 12, April, 1915, p. 316–322.) † **VIA**

1915, continued.

1031. —— Scientific management of the public utilities. (American political science review, Baltimore. v. 9, Aug., 1915, p. 488–495.) **SEA**

1032. —— Scientific management as a solution of the unemployment problem. (American Academy of Political and Social Science. Annals, Philadelphia. v. 61, Sept., 1915, p. 146–164.) **SA**

1033. Cordeal, Ernest. Standardization of methods in the railroad shop. (Engineering magazine, New York. v. 48, Feb.–March, 1915, p. 722–727, 827–832; v. 49, April–May, 1915, p. 51–57, 211–217.) **VDA**

1034. Corey, Fred B. The relation of the inspection department to the management. (Industrial engineering and engineering digest, New York. v. 15, Jan., 1915, p. 17–18.) †† **VA**

Also in *Iron age,* New York, v. 95, March 11, 1915, p. 566–567, † *VDA.*

"Inspection department should be responsible only to the general management of the company — it should be co-ordinate with the engineering and manufacturing departments."

1035. Crozier, William. Business news of nation's capital. (Iron trade review, Cleveland. v. 57, Dec. 30, 1915, p. 1293–1294.) **VIA**

Discusses scientific management.

1036. —— Criminal speeding-up system. (American industries, New York. v. 15, Jan., 1915, p. 30–31.) † **TDA**

Shows how organized labor's hostility to improved methods in production compares with official reports on efficiency in government's arsenals.

1037. —— Scientific management in government establishments. (Society to Promote Scientific Management. Bulletin, Hanover, N. H. v. 1, no. 5, Oct., 1915, p. 1–8.) **TMA**

Status of attempts to introduce methods into the arsenals.

1038. Culver, G. H. System in a factory stock department. (Engineering magazine, New York. v. 49, May, 1915, p. 174–183.) **VDA**

Method described in operation in a large manufacturing company and applicable to other large establishments.

1039. Day, F. Telephone plant organization. (Electrical review and western electrician, Chicago. v. 67, Dec. 4, 1915, p. 1028–1031.) **VGA**

1040. Dean, W. R. Efficiency in the brass foundry. (Metal industry, New York. v. 13, Aug., 1915, p. 327–329.) † **VIA**

1041. Dickerman, G. W. The development of an organization. (Efficiency Society. Journal, New York. v. 4, March, 1915, p. 35–40.) † **TMA**

1042. Diemer, Hugo. Education in scientific management. (Efficiency Society. Journal, New York. v. 4, Jan., 1915, p. 7–10.) † **TMA**

1043. Dowd, Albert A. Increased efficiency. (Sibley journal of engineering, Ithaca, N. Y. v. 29, Feb., 1915, p. 157–163.) **VDA**

Abstract in *Mechanical world,* London, v. 57, April 9, 1915, p. 172–173, †† *VFA.*

Detailed account of conditions in a large machine tool factory — the losses and remedies.

1044. —— Low productive efficiency: causes, effects, and suggested remedies. (Mechanical world, London. v. 57, Jan. 29, 1915, p. 55–56.) †† **VFA**

1045. —— The use and abuse of time studies. (Iron age, New York. v. 95, Feb. 4, 1915, p. 300–303.) †† **VDA**

Shows the need of practical men to make observations and fix rates.

1046. —— Value of preliminary sketches and layouts in production work. (Horseless age, New York. v. 36, Sept. 1, 1915, p. 232–234.) † **TOL**

1047. Drury, Horace Bookwalter. Scientific management; a history and criticism. New York: Columbia University Press, 1915. 222 p. illus. 8°. (Columbia University studies in history, economics and public law. v. 65, no. 2; whole no. 157.) **TB**

1048. Dunlap, John R. The literature of industrial management. (Engineering magazine, New York. v. 49, May, 1915, p. 163–166.) **VDA**

Historic events in the development of a new science.

1049. Eglee, Charles H. Personal character in its relation to practical efficiency. (New England Water Works Association. Journal, Boston. v. 29, June, 1915, p. 214–225.) **VDL**

Changes in business methods.

1050. Emerson, Harrington. Personality in organization. (Efficiency Society. Journal, New York. v. 4, Feb., 1915, p. 16–19.) † **TMA**

1051. Fairbanks, C. E. A card record of employees. (Engineering magazine, New York. v. 48, Jan., 1915, p. 573–575.) **VDA**

1052. Farnham, Dwight T. Scientific management for the factory of moderate size. (Engineering magazine, New York. v. 50, Oct., 1915, p. 46–51.) **VDA**

In a small plant Mr. Farnham developed an organization which enables the superintendent to break away from routine clerical work and gives him time to study and improve operations.

1053. Feiss, Richard A. Personal relationship as a basis of scientific manage-

1915, continued.

ment. (Society to Promote the Science of Management. Bulletin, Hanover, N. H. v. 1, Nov., 1915, p. 5–25.) **TMA**

Considers the remarkable success of Joseph & Feiss Co.

1054. —— Scientific management applied to the steadying of employment and its effect in an industrial establishment. (American Academy of Political and Social Science. Annals, Philadelphia. v. 61, Sept., 1915, p. 103–111.) **SA**

1055. Ficker, Nicholas Thiel. Distribution of equipment wear and tear. (Steel and iron, Pittsburgh. v. 49, Dec., 1915, p. 1088–1092.) †† **VA**

Spreading overhead expense and wasting of equipment over several heads to insure a more equitable charge upon each item.

1056. —— Manufacturing expense distribution. (Engineering magazine, New York. v. 49, June – Sept., 1915, p. 321–326, 553–559, 690–697, 862–871; v. 50, Oct. – Dec., 1915, p. 58–64, 254–261, 390–400.) **VDA**

Establishes methods for correctly apportioning manufacturing expenses so that every operation upon every article may be charged its just share.

1057. Finlay, J. R. Essentials of organization and management. (Engineering and mining journal, New York. v. 10, July 31, 1915, p. 171–176.) † **VHA**

Discussion of basic facts.

1058. Fish, E. H. What constitutes overhead. (Engineering magazine, New York. v. 49, July, 1915, p. 488–497.) **VDA**

Considers a typical shop and analyzes each of the items that contribute toward overhead expense.

1059. Franklin, Benjamin Alvey. Experiences in efficiency. New York: The Engineering Magazine Company, 1915. xi, 167 p. 12°. (Works management library.) **TM**

Based upon a series of articles originally printed in *Engineering magazine*, v. 45, p. 669–673, 817–821; v. 46, p. 201–206, 356–364, 530–538, 891–895, *VDA*.

1060. Frederick, Christine. La tenue scientifique de la maison. (Revue de métallurgie, Paris. année 12, April, 1915, p. 348–382.) † **VIA**

1061. Frederick W. Taylor cooperators. (American machinist, New York. v. 42, June 10, 1915, p. 992.) †† **VFA**

Organization formed to continue his work.

1062. Freeland, W. E. Modern ideas in a New England shop. illus. (Iron age, New York. v. 96, Dec. 23, 1915, p. 1457–1460.) **VDA**

How Athol Machine Co. proves that the so-called big plant has no monopoly of efficiency.

1063. Fuel Engineering Company of New York. Industrial power plant management. [New York: Richardson Press,] 1915. 24 p., 1 table. 16°. **VFC p.v.11, no.9**

1064. Gantt, Henry Laurence. How to create industrial leaders. (Engineering magazine, New York. v. 50, Dec., 1915, p. 428–437.) **VDA**

Abstract in *Iron age*, New York, v. 95, Jan. 21, 1915, p. 196–197, † *VDA*.

Paper read before American Economic Association, Dec. 30, 1914.

Mr. Gantt believes that those organizations will succeed best that can select their leaders in the most democratic manner.

1065. —— The relation between production and costs. (American Society of Mechanical Engineers. Journal, New York. v. 37, Aug., 1915, p. 466–475.) **VFA**

Abstract in *American machinist*, New York, v. 42, June 17, 1915, p. 1055–1056, †† *VFA*.

Offers theory that amount of expense to be borne by the product should bear the same ratio to the total normal operating expense as the product bears to the total normal product, and the expense of maintaining the idle portion of the plant ready to run is a business expense not chargeable to the product made.

1066. Gardner, Henry. Railway locomotive repair shop organization. (Railway age gazette, Mechanical edition, New York. v. 59, Oct. 15, 1915, p. 697–699.) **TPB**

Proper method. Efficiency and output increased by attention to this feature.

1067. Gilbreth, Frank Bunker. Motion study for the crippled soldier. **Tech. Div. — Clippings**

Paper presented at the meeting of the American Society of Mechanical Engineers, Oct. 12, 1915.

Investigation to determine what lines of work are open to various types of cripples.

1068. —— Motion study as an increase of national wealth. (American Academy of Political and Social Science. Annals, Philadelphia. v. 59, May, 1915, p. 96–103.) **SA**

1069. Gilbreth, Frank Bunker, and Mrs. L. M. GILBRETH. The co-operative spirit and industrial peace. (Iron age, New York. v. 96, Sept. 2, 1915, p. 528–530.) †† **VDA**

Modern management obliterates four causes of strikes.

1070. —— Educating workers for higher efficiency. (Iron age, New York. v. 96, Dec. 30, 1915, p. 1530–1533.) † **VDA**

Motion study, time study, chronocyclegraphs and other methods of transferring skill all have their place in educating workmen.

1071. —— The individual in modern management. (Iron age, New York. v. 96, Oct. 7, 1915, p. 802–804.) †† **VDA**

Relations aimed at and effect on human element.

1072. —— Motion models: their use in the transference of experience and the presentation of comparative results in educational methods. **Tech. Div. — Clippings**

Advanced print of paper presented at the meeting of the American Association for the Advancement of Science, Columbus, O., Dec. 27, 1915 – Jan. 1, 1916.

1073. —— Motion study and time study instruments of precision. (International

1915, continued.

Engineering Congress, San Francisco, 1915. Transactions: miscellany. San Francisco, 1916. p. 473–488.) **VDA**

Relates particularly to devices that are used for making measurements that enable one to eliminate waste.

1074. —— The three-position plan of promotion. (Iron age, New York. v. 96, Nov. 4, 1915, p. 1057–1059.) **†† VDA**

"Scheme of advancement."

1075. —— What scientific management means to America's industrial position. (American Academy of Political and Social Science. Annals, Philadelphia. v. 61, Sept., 1915, p. 208–216.) **SA**

1076. Godfrey, Hollis. Application of engineering methods to the problems of the executive, director, and trustee. (American Society of Mechanical Engineers. Journal, New York. v. 37, June, 1915, p. 334–340.) **VFA**

1077. Graham, Douglas A. The application of the theories of public regulation to the management of utilities. (Water and gas review, New York. v. 26, Nov., 1915, p. 24–27, Dec., p. 31.) **† 3 – VDA**

1078. Green, J. B. The perpetual inventory in practical stores operation. (Engineering magazine, New York. v. 48, March, 1915, p. 879–888.) **VDA**

1079. Hammond, E. K. Shop system of the American Machine and Foundry Co. (Machinery, New York. v. 21, Feb., 1915, p. 446–450.) **VFA**

1080. Hammond, John H. An efficiency system for road contractors. (Engineering and contracting, New York. v. 43, June 23, 1915, p. 552–554.) **† VDA**

Eleven report cards to give each day an accurate account of work.

1081. Harrington Emerson, the doyen of efficiency. (Efficiency magazine, London. v. 1, Sept., 1915, p. 5–8.) **† TMA**

1082. Hartley, C. W. Results of study made to indicate economic choice of shovels for handling different classes of material. (Engineering and contracting, Chicago. v. 43, March 31, 1915, p. 302–303.) **† VDA**

1083. Hartness, James. Le facteur humain dans l'organisation du travail. (Revue de métallurgie, Paris. v. 12, Sept., 1915, p. 729–803.) **VIA**

1084. Haskell, A. C. Cost of loading bricks in a boxcar by means of a portable belt conveyor. (Engineering and contracting, New York. v. 44, Sept. 15, 1915, p. 204.) **VDA**

1085. —— Superintendents can save money by short time studies. (Engineering record, New York. v. 71, March 13, 1915, p. 341.) **† VDA**

1086. Hathaway, H. K. Scientific management and its relation to the foundry industry. (American Foundrymen's Association. Transactions, Cleveland. v. 24, Sept. 29, 1915, p. 83–120.) **VIA**

Abstracts in *Foundry*, Cleveland, v. 43, Nov., 1915, p. 440–444, Dec., p. 503–507, 512, *VIA;* and in *Iron trade review*, Cleveland, v. 57, Oct. 14, 1915, p. 739–742, Oct. 21, p. 787–793, † *VHA*.

Explanation of purposes and accomplishments of scientific management and its utilization in the foundry business.

1087. Hauer, Daniel J. A comparison of the old and new methods of management. (The contractor, Chicago. v. 21, June 15, 1915, p. 32–33.) **VEA**

Actual work is described and lessons are drawn from it.

1088. —— How scientific management is applied to construction. (The contractor, Chicago. v. 21, April 15, 1915, p. 38–39; v. 22, Dec. 15, 1915, p. 22–23.) **VEA**

1089. —— Scientific management in choosing type and amount of plant. (The contractor, Chicago. v. 22, Sept. 15, 1915, p. 28–29.) **VEA**

1090. —— Scientific management in choosing type and make of plant. (The contractor, Chicago. v. 22, Oct. 15, 1915, p. 26–28.) **VEA**

1091. —— Scientific management and the contractor's finances. (The contractor, Chicago. v. 22, July 15, 1915, p. 25.) **VEA**

1092. —— Scientific management in planning jobs. (The contractor, Chicago. v. 21, May 15, 1915, p. 31–33.) **VEA**

1093. —— Some fundamental principles of scientific shoveling. (The contractor, Chicago. v. 21, June 1, 1915, p. 33–35; v. 22, July 1, 1915, p. 33–34, Aug. 1, p. 30–32, Sept. 1, p. 31–33.) **VEA**

Deals with every phase of handling materials with shovels.

1094. —— Time and motion studies as applied to construction work. (The contractor, Chicago. v. 22, Nov. 15, 1915, p. 27–29.) **VEA**

Shows their value.

1095. Hele-Shaw, H. S. Scientific organisation of industry. (Mechanical engineer, Manchester, Eng. v. 36, Sept. 10, 1915, p. 207–210, Sept. 17, p. 217–221.) **†† VFA**

Presidential address before the Engineering Section of the British Association for the Advancement of Science, Manchester, 1915.

1096. Hopf, Harry A. The planning department as a factor in the modern office organization. (Efficiency Society. Journal, New York. v. 4, Nov., 1915, p. 2–14.) **† TMA**

1915, continued.

1097. Hopkins, Ernest M. The supervisor of personnel and his functions. (Society to Promote the Science of Management. Bulletin, Hanover, N. H. v. 1, Jan., 1915, p. 9–15.) † TMA

Abstract in *Industrial engineering and engineering digest,* New York, v. 15, Jan., 1915, p. 7–11, *VA.*

The importance of the scientific selection of workers and their care and welfare.

1098. Hoxie, Robert Franklin. Scientific management and labor. New York: D. Appleton & Co., 1915. x p., 1 l., 302 p. 12°. TM

Concludes that scientific management has succeeded in creating an organic whole of the several departments of a plant, establishing a co-ordination previously impossible.

1099. Hubbard, Charles L. Ordinary wastes in the power plant. (Engineering magazine, New York. v. 49, Sept., 1915, p. 809–817.) VDA

Considers ways in which economies may be brought about in shops and industrial plants, especially in connection with the heating of buildings, feed water, and in various mechanical processes; also in generation of power and increasing output.

1100. Huber, Edward E. Efficiency in production of the Eberhard Faber Pencil Company. (Efficiency Society. Journal, New York. v. 4, Feb., 1915, p. 11–15.) † TMA

1101. Johnson, N. C. Material vs. methods. (Engineering record, New York. v. 72, Dec. 4, 1915, p. 684–687.) † VDA

Testimony of moving pictures in the study of concrete.

1102. Kennedy, R. E., and J. H. Hogue. Organization in the foundry of the University of Illinois Shop Laboratories. (American Foundrymen's Association. Transactions, Cleveland. v. 24, Sept. 29, 1915, p. 121–142.) VIA

Method of instruction and plans.

1103. Kennedy, William M. Uniform cost systems. Where and how the direct labor percentage plan fails. (Boiler maker, New York. v. 15, Nov., 1915, p. 337–339.) VFA

1104. Kent, Robert Thurston. Labor vs. scientific management. Analyses of steps necessary to convince the workman that methods which increase production are a benefit to him. (Iron trade review, Cleveland. v. 56, March 4, 1915, p. 471–475.) † VHA

1105. —— Scientific management and the labor problem. (Industrial engineering and engineering digest, New York. v. 14, Nov., 1914, p. 418–421.) † VA

1106. —— Scientific management in the office. (Iron age, New York. v. 95, Jan. 7, 1915, p. 82–86, Jan. 14, p. 142–144.) †† VDA

How time studies and task setting in duplication work have succeeded. Schedules for executives. Basis for bonus payment for messengers.

1107. —— The use of time study for rate setting. (Industrial engineering and engineering digest, New York. v. 15, Sept., 1915, p. 98–103.) † VA

Complete machine analysis by time study.

1108. —— The utilization of time study data. (Iron age, New York. v. 95, May 27, 1915, p. 1178–1181.) †† VDA

Also in *Iron trade review,* Cleveland, v. 56, June 3, 1915, p. 1109–1113, †† *VHA.*

Latest method of analyzing machine and work-handling operations as a guide in new work.

1109. Kent, William. A summer course in scientific management. Two weeks' experience strengthens a belief in teachableness of subject; industrial engineering as a profession promises many opportunities. (Iron age, New York. v. 96, Dec. 2, 1915, p. 1306–1307.) † VDA

1110. Knight, Austin Melvin. Efficiency of the United States navy. (Efficiency Society. Journal, New York. v. 4, Feb., 1915, p. 25–36.) † TMA

1111. Knoeppel, Charles Edward. Installing efficiency methods. New York: The Engineering Magazine, 1915. 1 p.l., viii, 258 p. illus. 4°. (Works management library.) TM

The best presentation of the Emerson system in its best form. Fully illustrated.

An expansion and recasting of articles published in the *Engineering magazine,* v. 46, p. 539–544, 734–738, 943–958; v. 47, p. 65–75, 241–250, 399–413, 570–579, 693–704, 830–841, *VDA.*

1112. Koon, Sidney G. A card record of employees. (Engineering magazine, New York. v. 49, April, 1915, p. 89–90.) VDA

1113. Labor problems in scientific management. (Iron age, New York. v. 94, Dec. 10, 1914, p. 1369–1372.) †† VDA

1114. Labor union, scientific management and the government. (Industrial engineering and engineering digest, New York. v. 15, Jan., 1915, p. 6.) † VA

1115. Later, E. P. Efficiency in the plating room. (Foundry, Cleveland. v. 43, Sept., 1915, p. 360–365.) VIA

1116. Le Chatelier, Henri. Frederic Winslow Taylor, 1856–1915. (Revue de métallurgie, Paris. année 12, April, 1915, p. 185–196.) † VIA

1117. —— Le système Taylor. Science expérimentale et psychologie ouvrière. (Revue de métallurgie, Paris. année 12, April, 1915, p. 197–232.) † VIA

1118. Lesley, E. P. Development and progress in "scientific management" during recent years. [With discussion.] (International Engineering Congress, San Francisco, 1915. Transactions; miscellany. San Francisco, 1916. p. 417–445.) VDA

1119. Lewis, Elias St. Elmo. Getting the most out of business; observations of the

1915, continued.

application of the scientific method to business practice. New York: Ronald Press Co., 1915. 2 p.l., iii–xx p., 1 l., 23–483 p., 1 port. 8°. **TM**

An expansion of articles published in *Carton*, 1913.

1120. [The **Library** of factory management.] Chicago: A. W. Shaw Co. [1915.] 6 v. illus. 8°. **TM**

[v. 1.] Buildings and maintenance.
[v. 2.] Executive control.
[v. 3.] Labor.
[v. 4.] Machinery and equipment.
[v. 5.] Materials and supplies.
[v. 6.] Operation and costs.

1121. **Loehe,** Theodor. Wirtschaftliches Arbeiten im Giessereibetriebe. (Giesserei-Zeitung, Berlin. Jahrg. 12, March 1, 1915, p. 65–67, April 15, p. 119–123, May 15, p. 150–153, June 15, p. 182–185, July 1, p. 196–198.) † **VIA**

1122. **Logan,** George H. Shop efficiency. Analysis of factors in administration. (Railway review, Chicago. v. 57, Oct. 9, 1915, p. 464–467.) † **TPB**

1123. **Lord,** C. B. Personality in the shop. (American machinist, New York. v. 42, Feb. 11, 1915, p. 233–234, Feb. 25, p. 315–316, March 11, p. 421–422, March 25, p. 507–508, April 8, p. 593–594.) †† **VFA**

Comments on these articles by other writers will be found in v. 42, p. 525–526 and 830.

Discusses the workman, the foreman and the superintendent. Based on practical experience.

1124. **Lynde,** Charles C. Efficient structural shop production. (Steel and iron, Pittsburgh. v. 49, July, 1915, p. 713–719.) †† **VA**

Schemes found profitable by various plants under pressure of different contracts.

1125. —— Forge shop production methods. Layout schemes and production schedules found profitable in plants manufacturing various lines of hammered and forged articles. (Steel and iron, Pittsburgh. v. 49, June, 1915, p. 633–637.) †† **VA**

1126. **McCormick,** S. B. Efficiency in college administration. (Society for the Promotion of Engineering Education. Proceedings, Pittsburgh. v. 23, 1915, p. 193–203.) **VDA**

1127. **Maize,** F. P. Departmental work planning system at Portland [Oregon]. (Electric railway journal, New York. v. 46, Sept. 18, 1915, p. 565–567.) **TPB**

1128. **Merrick,** Dwight V. Making instruction cards from time studies. (Iron age, New York. v. 95, March 11, 1915, p. 560–563.) †† **VDA**

How time studies are analyzed. Establishing standard time.

1129. —— The practical utilization of time study data. (Industrial engineering, New York. v. 15, Feb., 1915, p. 31–34.) † **VA**

Most approved methods of selecting elements.

1130. **Methods** and results of cost recording on pavement work at St. Paul, Minn. (Engineering and contracting, Chicago. v. 44, Dec. 8, 1915, p. 441–444.) †† **VA**

1131. **Meyers,** C. J. Science of management. (In: C. B. Thompson, Scientific management, Cambridge, 1914. p. 132–152.) **TM**

1132. **Mixter,** C. W. A proposed modification of task and bonus. (Society to Promote the Science of Management. Bulletin, Hanover, N. H. v. 1, Jan., 1915, p. 15–16.) **TMA**

1133. **Moffett,** L. W. A tremendous loss to the taxpayer. (Iron trade review, Cleveland. v. 56, May 13, 1915, p. 963–966.) †† **VHA**

Discusses abolition of scientific management in government shops.

1134. **Montoliu,** C. El sistema de Taylor y su crítica. (Estudio, Barcelona. tomo 12, Oct. – Dec., 1915, p. 78–103, 231–244, 367–393.) * **DR**

1135. **Morrison,** Charles J. The eight-hour day. (Engineering magazine, New York. v. 50, Dec., 1915, p. 363–366.) **VDA**

Specific examples of cases where shorter hours have lowered costs.

1136. —— Task setting. (Engineering magazine, New York. v. 49, Sept., 1915, p. 894–900.) **VDA**

Lays down simple rules by which schedules may be established and maintained which will be found fair to both employer and employee. Shows that all possible assistance must be given the workman in attaining the set schedules.

1137. **Morse,** William H. The purchasing agent and high-class product. (Engineering magazine, New York. v. 49, June, 1915, p. 333–335.) **VDA**

This article covers only purchasing in connection with manufacturing.

1138. **Moxey,** Louis W., jr. Bookkeeping and cost-keeping for electrical contractors. (Electrical world, New York. v. 66, Nov. 20, 1915, p. 1153–1155.) **VGA**

1139. **Murphy,** Carroll D. Less office routine. Methods of handling and arranging work in the office which reduce expense without impairing efficiency. (System, London. v. 27, March, 1915, p. 196–203.) **TMA**

1140. **Myers,** David Moffat. More about the human factor. (Engineering magazine, New York. v. 49, Sept., 1915, p. 801–808.) **VDA**

Concluding paper on power plant economics.

1915, continued.

1141. **Myles,** W. L. Taylorism and the bonus system. (Machinery, New York. v. 21, Jan., 1915, p. 404–405.) † VFA

1142. [**Organization** formed to continue the work of Frederick W. Taylor.] (Engineering news, New York. v. 73, May 20, 1915, p. 1006.) † VDA

1143. **Osborne,** Thomas Mott. Prison efficiency. (Efficiency Society. Journal, New York. v. 4, Nov., 1915, p. 23–43.) † TMA

1144. **Outlines** of factory operation. Chicago: A. W. Shaw Co. [1915?] 144 p. illus. 12°. (Students' business book series.) TM

Getting the largest return from labor. Gearing up production. Equipment that insures maximum production. Making the building help pay profits.

1145. **Parkhurst,** Frederic Augustus. Operating a foundry on a scientific basis. (Foundry, Cleveland. v. 42, Nov. – Dec., 1914, p. 443–447, 478–486; v. 43, Jan. – Feb., 1915, p. 21–26, 53–58.) VIA

A large Detroit shop specializing in aluminum castings.

1146. —— Scientific management in the foundry. (American Foundrymen's Association. Transactions, Cleveland. v. 23, 1915, p. 157–291.) VIA

Abstract in *Metal record and electroplater,* Bridgeport, v. 1, April – Sept., 1915, p. 15–16, 38, 73–74, 108–109, 136–138, 165–166, †† *VIA.*

1147. **Pattison,** Mary Stranahan Hart. Principles of domestic engineering; or, The what, why and how of a home; an attempt to evolve a solution of the domestic "labor and capital" problem — to standardize and professionalize housework — to re-organize the home upon "scientific management" principles — and to point out the importance of the public and personal element therein, as well as the practical. [New York: Trow Press, 1915.] 3 p.l., 310 p., 1 port. 8°. VSB

Experiments at Colonia for the New Jersey women's clubs. Deals not so much with details of methods and equipment as with the fundamental principles of home building and management.

1148. **Perkins,** F. M. A few of the first principles of shop planning. (Foundry, Cleveland. v. 43, Sept., 1915, p. 366–372.) VIA

Scientific management applied to a government foundry.

1149. **Phillips,** C. A. Current wage theories. (Society to Promote the Science of Management. Bulletin, Hanover, N. H. v. 1, Jan., 1915, p. 1–3.) TMA

1150. **Plant** provides purest water in Terre Haute. (Water and gas review, New York. v. 26, Dec., 1915, p. 27.) † VDA

Scientific equipment and trained workers insure good supply — test made every half hour to keep certain records. Reports show local patrons obtain better grade than other cities.

1151. **Polakov,** Walter N. Controlling the cost of electricity. (Engineering magazine, New York. v. 49, May, 1915, p. 235–240.) VDA

1152. —— Management of central stations. (Engineering magazine, New York. v. 50, Oct., Dec., 1915, p. 52–58, 367–372.) VDA

Considers the organization of a power plant, the proper selection of location, construction, equipment and personnel and the principles of operation.

1153. —— Scientific management in power plants. (Practical engineering, Chicago. v. 19, Jan. 1, 1915, p. 1–6.) † VDA

A practical application in the Warrior Ridge plant of the Pennsylvania Central Light and Power Co.

1154. **Potter,** Z. L. Fixing standard time for a bonus system. (Railway age gazette, Mechanical edition, New York. v. 89, April, 1915, p. 192–193.) TPB

1155. **Prentiss,** F. L. Stock keeping in adding machine factory. (Iron age, New York. v. 96, Dec. 9, 1915, p. 1347–1351.) †† VDA

Handling and routing.

1156. **Prohibition** of scientific shop management at army arsenals. (Iron age, New York. v. 96, Dec. 30, 1915, p. 1547.) † VDA

1157. **Purinton,** Edward Earle. Efficiency in the factory. illus. (Independent, New York. v. 84, Oct. 25, 1915, p. 138–144.) * DA

1158. **Ramsay,** Sir William. The "general staff" that directs German business. (System, London. v. 28, July, 1915, p. 15–19.) TMA

1159. **Rear,** George W. Efficiency in the bridge and building department. (Railway age gazette, New York. v. 59, Dec. 17, 1915, p. 1160–1162.) †† TPB

1160. **Reinicker,** C. E. The improvement of distribution employees. illus. (American gas light journal, New York. v. 102, Jan. 18, 1915, p. 33–39.) † VOA

1161. **Renold,** Charles G., and H. W. Allingham. Notes sur l'organisation scientifique des usines. (Revue de métallurgie, Paris. v. 12, April, 1915, p. 323–337.) † VIA

Methods of Renold plant.

1162. **Results** of a time study on steam-main construction. (American gas light journal, New York. v. 103, July 5, 1915, p. 13.) VOL

1163. **Rice,** Joseph M. Scientific management in education. London: G. G. Harrap & Co., 1915. xxi, 282 p., 1 table. 8° SSD

1164. **Rider** to army bill. (Iron age, New York. v. 95, Feb. 18, 1915, p. 430.) †† VDA

Against time studies.

1165. **Riders** to appropriation bills not to work as management opponents desired.

1915, continued.

(Iron age, New York. v. 95, March 11, 1915, p. 593–594.) †† VDA

No victory over scientific management.

1166. Rindge, Fred. H. The application of efficiency principles. (Mining and scientific press, San Francisco. v. 111, Sept. 25, 1915, p. 476–480.) VA

Deals especially with the human side of management.

1167. Rogers, C. M. Fireman's bonus successful. (Power, New York. v. 42, Dec. 28, 1915, p. 906.) VFA

1168. Rose, J. T. General business efficiency in connection with cotton mill management. (Textile world record, Boston. v. 49, May, 1915, p. 190–193.) VLA

1169. Sanitation in shops and factories. Report of committee on toilet regulations for industrial plants. (Engineering magazine, New York. v. 49, April, 1915, p. 100–101.) VDA

Committee of the Boston Society of Civil Engineers.

1170. Schaefer, C. T. Complete card system for a manufacturing establishment. (Iron tradesman, Dalton, Ga. v. 73, May–June, 1915, p. 123–124, 178–180.) † VA

1171. Schipper, J. Edwards. Eiseman's train despatcher system. (Automobile, New York. v. 32, April 1, 1915, p. 580–585.) TOL

New system of production of magnetos.

1172. Schwedtman, F. C. Efficiency — applied common sense and experience. (American industries, New York. v. 15, Feb., 1915, p. 16–17.) † TDA

1173. Scientific management in a cotton weave room. (Textile world record, Boston. v. 49, Aug., 1915, p. 526–528.) † VLA

1174. Scientific management under the X-ray. (Iron age, New York. v. 96, Nov. 25, 1915, p. 1236–1238.) †† VDA

Regarded as prejudicial to organized labor.

1175. Seabrook, Edwin L. Efficiency in contracting. (National builder, Chicago. v. 57, Oct., 1915, p. 57–58, Nov., p. 45–47.) † VEA

1176. Seward, H. F. Special application of the piece work system. (Journal of accountancy, New York. v. 20, Aug., 1915, p. 122–128.) TMA

How small manufacturers can reduce expenses.

1177. A **Simple** and effective routing system. (American machinist, New York. v. 42, June 3, 1915, p. 953–958.) †† VFA

A description of a factory system in operation at the plant of C. B. Cottrell & Sons Co.

1178. Smith, Joseph Russell. The elements of industrial management. Philadelphia: J. B. Lippincott Co. [1915.] 3 p.l., 291 p., 1 pl. 8°. TM

1179. —— The small corporation — a pitfall. (Engineering magazine, New York. v. 49, Aug., 1915, p. 672–678.) VDA

This paper might be accurately entitled: How to fail in business, for if any of the ten items mentioned finds place in an organization that organization will find itself in a serious predicament.

1180. Stannard, C. N. Office management. (American gas light journal, New York. v. 103, Nov. 1, 1915, p. 282–283.) † VOA

1181. Status of scientific management in the war and navy department plants. (Engineering and contracting, Chicago. v. 43, June 9, 1915, p. 506.) †† VDA

1182. Stronck, H. N., and J. R. Billyard. Visualizing working conditions in a mine. (Mining & scientific press, San Francisco. v. 110, March 20, 1915, p. 440–442.) †† VA

Describes application of graphic records to mining conditions.

1183. Suggestions pertaining to the improvement and standardization of procedure in water works management. (Engineering and contracting, New York. v. 43, June 30, 1915, p. 569–570.) † VDA

Abstract from address of George G. Earle at a meeting of the American Water Works Association.

1184. Taylor, Frederick Winslow. The making of a putting green. (Country life in America, Garden City, N. Y. v. 27, Feb., 1915, p. 41–42, 66, 68, March, p. 69–70, 86, 88, 90, 92, 94, 96, 98, 100, 102, April, p. 55, 70, 72, 74, 76, 78, 80; v. 28, May, 1915, p. 67, 80, 82, 84, 86, June, p. 56, 70, 72, 74, 76, 78.) †† MVA

Abstract printed in *Revue de métallurgie*, Paris, année 12, April, 1915, p. 383–398, † *VIA*.

1185. —— The principles of scientific management. (Industrial engineering and engineering digest, New York. v. 15, Sept., 1915, p. 85–89.) † VA

Address delivered March 3, 1915. Its latest developments as regarded by its founder.

1186. Taylor, Frederick W. A brief account of his work. (Engineering news, New York. v. 73, April 1, 1915, p. 642.) † VDA

1187. —— Funeral. (Engineering news, New York. v. 73, April 1, 1915, p. 655.) † VDA

1188. —— Memorial meeting. (Efficiency Society. Journal, New York. v. 4, Nov., 1915, p. 43–46.) † TMA

1189. —— Obituary. (Engineering news, New York. v. 73, March 25, 1915, p. 604–605.) † VDA

1190. Thompson, Clarence Bertrand. How scientific management works. (Factory, Chicago. v. 14, June, 1915, p. 399–401; v. 15, July–Dec., 1915, p. 16–18, 104–106, 184–187, 280–284, 380–383, 458–463; v. 16, Jan.–May, 1916, p. 20–22, 128–131, 224–227, 348–351, 456–458.) TMA

1915, continued.

1191. —— Organisation scientifique du travail. Collection des mémoires les plus importants relatifs au système Taylor. Résumé par H. Le Chatelier. (Revue de métallurgie, Paris. année 12, April, 1915, p. 233–315.) † VIA

1192. —— Scientific management in practice. (Quarterly journal of economics, Cambridge, Mass. v. 29, Feb., 1915, p. 262–307.) TAA

1193. **Thompson,** Sanford E., and W. O. LICHTNER. Construction management. (Western Society of Engineers. Journal, Chicago. v. 20, Feb., 1915, p. 109–151.) VDA

Abstract in *Engineering and contracting,* Chicago, v. 43, May 12, 1915, p. 428–432, *VDA.*

Application of scientific management to this class of work.

1194. **Time** study on excavating and handling material. (Municipal engineering, Indianapolis. v. 49, Aug., 1915, p. 77.) VDA

1195. **Time** study shows expensive defect in cement-handling methods. (Engineering record, New York. v. 72, Oct. 9, 1915, p. 460.) † VDA

1196. **Towne,** Henry R. Frederick Winslow Taylor: sketch of his life. (Engineering magazine, New York. v. 49, May, 1915, p. 161–163.) VDA

1197. **Valentine,** Robert G. New certificates of character for manufacturers. (Industrial engineering and engineering digest, New York. v. 15, Feb., 1915, p. 40–42.) † VA

The industrial audit will be required in the future exactly as a financial and plant audit is now given.

1198. —— The progressive relation between efficiency and consent. (Society to Promote the Science of Management. Bulletin, Hanover, N. H. v. 1, Nov., 1915, p. 26–30.) TMA

1199. —— Scientific management and organized labor. The function of the industrial counselor; possible relations of scientific management and labor unions. (Society to Promote the Science of Management. Bulletin, Hanover, N. H. v. 1, Jan., 1915, p. 3–9.) TMA

1200. **Van Deventer,** John Herbert. Handbook of machine shop management. New York: McGraw-Hill Book Co., 1915. viii, 374 p., 1 table. 16°. Desk – Tech. Div.

A useful book on the study and solution of problems in management.

1201. —— Keeping track of manufacturing expense in the small shop. (American machinist, New York. v. 42, Feb. 18, 1915, p. 271–273, Feb. 25, p. 313–315.) †† VFA

Describes a simple way in which labor items are handled with the purpose of obtaining a periodical statement of manufacturing expense.

1202. —— Reducing the intervals in the small shop. (American machinist, New York. v. 42, June 24, 1915, p. 1069–1070.) †† VFA

The problem is treated from several points of view and the relative importance of speed and feed increases, with other kinds of time savings, is discussed.

1203. —— Small shop time studies. (American machinist, New York. v. 42, June 17, 1915, p. 1025–1026.) †† VFA

Tells how it is done in small specialty shops where the closest analysis is profitable and in the small jobbing and repair shops where a broader grouping will bring best results.

1204. —— Small shops and the small-tool problem. (American machinist, New York. v. 42, May 6, 1915, p. 761–763.) †† VFA

Shows how far the small shop should go in acquiring a small-tool equipment.

1205. —— Squad foreman and stock detention rooms. (American machinist, New York. v. 42, March 11, 1915, p. 409–412.) †† VFA

Organization described is an excellent one for the growing small shop to adopt.

1206. —— The ultimate type of management. (Engineering magazine, New York. v. 49, June, 1915, p. 394–401.) VDA

The line and staff type of organization has been called by other writers the ideal scheme. To prove this viewpoint Mr. Van Deventer takes as his guide the human nervous system. The body being the most highly complex organization, its management is, therefore, the ultimate type.

1207. —— Wasted intervals in the small shop. (American machinist, New York. v. 42, June 10, 1915, p. 981–982.) †† VFA

This article deals with the analysis of a simple lathe job and indicates the value of time study.

1208. **Wade,** Eskholme. Efficiency: the real business economy. illus. (System, London. v. 28, Oct., 1915, p. 163–172.) TMA

1209. **Wade,** Herbert T. The national Bureau of Standards and standards for public utilities. (Engineering magazine, New York. v. 49, May, 1915, p. 240–251.) VDA

1210. **Wage** system of scientific management. (Industrial engineering and engineering digest, New York. v. 15, Feb., 1915, p. 45–50.) † VA

The workman who expends a greater effort to produce a larger output should be more highly rewarded than he who does the minimum amount. Modern wage systems here described accomplish this object.

1211. **Walker,** P. F. Methods of teaching industrial management at the University of Kansas. (Society for the Promotion of Engineering Education. Proceedings, Pittsburgh. v. 23, 1915, p. 137–149.) VDA

1212. **Wallichs,** A. Fortschritte in der Anwendung der wissenschaftlicher Betriebsführung (Taylor-System), insbeson-

1915, continued.

dere im Giessereiwesen. (Stahl und Eisen, Düsseldorf. Jahrg. 35, Dec. 30, 1915, p. 1323–1328.) VIA

1213. White, Harold C. How to organize a night force. (Mechanical world, London. v. 48, July 9, 1915, p. 16–17.) †† VFA

Also in *Industrial engineering and engineering digest*, New York, v. 15, Sept., 1915, p. 95–97, †† *VA* and in *Iron trade review*, Cleveland, v. 56, May 27, 1915, p. 1056–1058, †† *VHA*.

Suggestions for securing the best results. Paper presented before National Machine Tool Builders Convention, Atlantic City, May 20, 1915.

1214. Willcutt, George B. The value of railway statistics. Benefits in administration. (Electric railway journal, New York. v. 46, Oct. 9, 1915, p. 705–707.) †† TPB

1215. Williams, A. D. Keeping track of plant operation. (Power, New York. v. 41, March 2, 1915, p. 292–294.) †† VFA

Recording instruments and system of plant records employed at the Cleveland municipal plant.

1216. Williams, John H. The index as a factor in industry. (Society to Promote the Science of Management. Bulletin, Hanover, N. H. v. 1, May, 1915, p. 2–6.) TMA

1217. Winchell, B. L. Personal efficiency. (Railway age gazette, New York. v. 58, Jan. 29, 1915, p. 191.) †† TPB

1218. Wolf, Robert B. Individuality in industry. (Society to Promote the Science of Management. Bulletin, Hanover, N. H. v. 1, Aug., 1915, p. 2–8.) TMA

1219. Wright, Roy V. How do you select and promote your men? (Railway age gazette, New York. v. 59, Aug. 6, 1915, p. 231–233.) †† TPB

1220. Yeomans, George G. Precedent versus progress in the stores department. (Railway age gazette, New York. v. 59, Aug. 6, 1915, p. 237–238.) †† TPB

Methods of control and accounting.

1916

1221. Against Tavenner bill. Sentiment grows, postmaster-general aiding. — To be made a rider. (Iron age, New York. v. 97, May 18, 1916, p. 1206.) † VDA

1222. Against the Taylor system. (Iron age, New York. v. 97, Jan. 20, 1916, p. 214.) † VDA

Plants making munitions for the government aimed at by labor.

1223. Albright, H. F. How we manage to guess right 90% of the time. (System, Chicago. v. 30, Aug., 1916, p. 148–156.) TMA

General superintendent of Western Electric Co. describes his idea of scientific management.

1224. Alexander, W. M. Building for future shop organization. Training the incoming men and boys so that they will eventually be able to render full value for their services... (Steel and iron, Pittsburgh. v. 50, July, 1916, p. 223–225, 229.) † VA

1225. Alford, L. P. Introduction of shop management in typewriter plant. (American machinist, New York. v. 45, Sept. 14, 1916, p. 457–458, Sept. 21, p. 497–499, Sept. 28, p. 537–540, Oct. 5, p. 585–587.) VFA

Remington Typewriter Company.

1226. Alvord, T. H. Training the apprentice. (Machinery, New York. v. 22, May, 1916, p. 756.) VFA

The time element in shop work.

1227. "Always bad for a man not to do his best," says Secretary Baker in opposing the Tavenner bill. (Iron trade review, Cleveland. v. 58, May 4, 1916, p. 965.) † VHA

1228. Ann Arbor Conference on Scientific Management. (Iron age, New York. v. 97, May 4, 1916, p. 1059.) † VDA

1229. Anti-efficiency legislation. The Tavenner bill. (American industries, New York. v. 16, May, 1916, p. 15–17.) † TDA

1230. Anti-time study legislation. (Iron age, New York. v. 97, June 15, 1916, p. 1444.) † VDA

1231. Armstrong, G. W. Essentials of shop efficiency. (Railway mechanical engineer, New York. v. 90, April, 1916, p. 201–203.) † TPB

Abstract in *Mechanical world*, London, v. 59, June 23, 1916, p. 299–300, † *VFA*.

1232. Astle, Wilfred G. Checking losses in the store room. (Iron trade review, Cleveland. v. 58, Jan. 27, 1916, p. 235–239.) VIA

"Balance of stores" system. Advantages.

1233. Babcock, George D. Fixing individual wage rates on facts. (Iron age, New York. v. 97, June 8, 1916, p. 1375–1379.) †† VDA

Men rated periodically to keep all of equal value to the industry for the money paid them.

1234. —— The Taylor system of management in the Franklin shop. (Engineering magazine, New York. v. 51, Sept., 1916, p. 843–848; v. 52, Oct. – Nov., 1916, p. 1–9, 177–185.) VDA

Why adopted, how it was applied and the results.

1235. Baker aids fight for efficiency. Cabinet member points out fallacy of unions' position. (Iron trade review, Cleveland. v. 58, May 4, 1916, p. 1003–1005.) † VHA

1236. Baker protests. (Iron trade review, Cleveland. v. 58, April 27, 1916, p. 921.) †† VHA

Secretary Baker protests against abolishing efficiency from government works.

1916, continued.

1237. **Barth,** Carl George. Scientific management in a brass foundry. (Foundry, Cleveland. v. 44, Aug., 1916, p. 319–320.) † VIA

1238. **Bayle,** F. Application d'une théorie du salaire moderne dans les manufactures. Introduction à la méthode de Taylor. (Société internationale des électriciens. Bulletin, Paris. série 3, tome 6, May, 1916, p. 199–234.) VGA

1239. **Beardmore,** Sir William. The application of science in factories. (Iron and Steel Institute. Journal, London. v. 93, May, 1916, p. 30–47.) VIA

Abstract in *Engineering,* London, v. 101, May 5, 1916, p. 437–439, *VDA.*

Presidential address to the Iron and Steel Institute.

1240. **Beatty,** Emmeline S. Department store psychology. (100%, Chicago. v. 6, Feb., 1916, p. 13–20.) TMA

By the head of the educational and efficiency department of Rothschild & Co., Chicago.

1241. **Becker,** O. M. How to increase factory efficiency. (Engineering magazine, New York. v. 50, March, 1916, p. 835–852; v. 51, April-Aug., 1916, p. 25–39, 177–193, 333–343, 501–520, 657–672.) VDA

Natural lighting. Artificial lighting. Heating and ventilating. Cleanliness and industrial efficiency.

1242. **Bell,** Hugh. The division of the product of industry. (Machinery market, London. July 28, 1916, p. 23–24, Aug. 4, 1916, p. 25–26.) VFA

1243. **Bell,** Louis. The daylight saving movement. (Electrical world, New York. v. 67, June 3, 1916, p. 1304–1305.) VGA

1244. **Benedict,** B. W. Demands of efficiency in laboratory training. (Efficiency Society. Journal, New York. v. 5, March, 1916, p. 152–154.) † TMA

1245. —— Getting the most out of tools. (Railway mechanical engineer, New York. v. 90, Jan., 1916, p. 35–37.) TPB

1246. **Bewegungsstudien** für die Unterweisung Kriegsbeschädigter. (Die Werkzeugmaschine, Berlin. Jahrg. 20, Heft 2, Jan. 30, 1916, p. 25–27.) VFA

1247. **Billings,** E. J. Output vs. input. (Gas record, Chicago. v. 10, Aug. 9, 1916, p. 97–98.) VOL

Suggests apparatus and instruments every central station should have.

1248. A **Blow** at efficiency. Congressional measure to regulate the method of directing work of government employees. (Stone & Webster's journal, Boston. v. 18, April, 1916, p. 275–277.) VGA

1249. **Books** on scientific management. (Machinery, New York. v. 22, March, 1916, p. 605.) VFA

1250. **Bradley,** Luke C. Training men for supervision and executive positions. (Stone and Webster's journal, Boston. v. 19, Oct., 1916, p. 290–301.) VGA

1251. **Brisco,** Norris Arthur. Efficiency in distribution. (Efficiency Society. Journal, New York. v. 5, April, 1916, p. 209–220.) † TMA

1252. **Brown,** Thomas. Better foremen — an economic gain. Some arguments in favor of the get-together spirit among electro-platers. (Metal industry, New York. v. 22 [new series, v. 14], March, 1916, p. 117–118.) † VIA

1253. **Bryant,** G. F. Machining 9.2-inch high-explosive shells. (Iron age, New York. v. 98, Aug. 3, 1916, p. 238–240.) † VDA

1254. **Burlingame,** Luther D. The human factor in foundry production. (Iron age, New York. v. 98, Sept. 21, 1916, p. 632–635.) † VDA

Abstract in *Iron trade review,* Cleveland, v. 59, Sept. 21, 1916, p. 592–594, † *VHA.*

Describes Brown & Sharpe Mfg. Co.'s methods.

1255. **Bursley,** Joseph A. Modern shop management. (Iron age, New York. v. 98, Aug. 10, 1916, p. 310–311.) † VDA

1256. **Campaign** against the Tavenner bill. (Iron trade review, Cleveland. v. 58, April 13, 1916, p. 805.) VHA

1257. **Carpenter,** Charles U. Pushing up production and lowering costs. (Engineering magazine, New York. v. 51, Aug., 1916, p. 641–650; v. 52, Oct., 1916, p. 95–104.) VDA

Shows how one company increased output fourfold in four months while only doubling its force.

1258. **Chappelle,** C. C. Fundamental principles of car operation efficiency. (Electric railway journal, New York. v. 47, Jan. 15, 1916, p. 117–125.) TPB

A study of the practical and technical principles involved in the use of time-element factors in railway operation.

1259. **Chipman,** Miner. Industrial preparedness. (Scientific American, New York. v. 114, May 20, 1916, p. 526.) †† VA

Cutting costs in paper mills.

1260. **Chisholm,** Cecil. New methods that have increased output. (System, London. v. 29, May, 1916, p. 331–333.) TMA

Scientific management increased output 100 per cent.

1261. **Cleary,** Leo J. What does efficiency in business really mean? (The Dodge idea, Mishawaka, Ind. v. 32, Feb., 1916, p. 546, 564.) †† VA

1262. **Clothier,** R. C. The selective function of the employment department. (Efficiency Society. Journal, New York. v. 5, May, 1916, p. 237–248.) † TMA

1916, continued.

1263. Collins, Francis W. Waste in public utility power plants. (American gas light journal, New York. v. 104, Feb. 14, 1916, p. 108–109.) † VOA

1264. Collins, William J. Scientific management applied at one station. (Railway age gazette, New York. v. 61, Aug. 11, 1916, p. 240–242.) †† TPB

D., L. & W. R.R. station, Syracuse, N. Y.

1265. Conference on scientific management. (Iron age, New York. v. 97, May 18, 1916, p. 1208–1211.) †† VDA

Also in *Iron trade review*, Cleveland, v. 58, May 18, 1916, p. 1107–1108, †† *VHA*.

Report of three days' meeting at Ann Arbor, Mich., May 11, 12 and 13, 1916.

1266. Conover, W. Rockwood. Manufacturing efficiency. (American machinist, New York. v. 45, Aug. 10, 1916, p. 225–226.) †† VFA

"Prepared for author's forthcoming book on *Industrial economics.*"

1267. Cook, C. W. Efficiency system as applied to the manufacture of plated ware. (Metal industry, New York. v. 22 [new series, v. 14], April, 1916, p. 163–164.) † VIA

1268. Co-operating in time study methods. (100%, Chicago. v. 6, March, 1916, p. 86–88.) TMA

1269. Cordner, A. R., and H. F. Porter. Better light for night work. How scientific lighting saves the eyes, increases efficiency and cuts cost. (System, London. v. 29, Jan., 1916, p. 23–29.) TMA

1270. Cornell, R. H. The danger of too much efficiency. (Iron tradesman, Atlanta, Ga. v. 76, Sept., 1916, p. 33–34.) † VA

1271. Cornell, S. Working efficiency of rolling steel. (Metallurgical and chemical engineering, New York. v. 15, Aug. 15, 1916, p. 177–184.) VIA

1272. Cost accounting. What the Federal Trade Commission is doing to promote business efficiency. (Painters magazine, New York. v. 43, Sept., 1916, p. 476–480.) † VOA

1273. Cost-keeping and efficiency in engineering. (Canadian engineer, Toronto. v. 30, March 9, 1916, p. 329–332.) † VDA

1274. Cottingham, Walter H. Modern business methods that succeed. (Efficiency Society. Journal, New York. v. 5, Feb., 1916, p. 20–32.) † TMA

1275. Coxe, Edward H. Safety and efficiency in coal mining. (Coal age, New York. v. 10, July 29, 1916, p. 176–178.) † VHWA

Discipline is the foundation of safety.

1276. Crosby, E. L. Some methods of standardizing unit time. (Steel and iron, Pittsburgh. v. 50, May, 1916, p. 147–149.) † VA

1277. Crozier, William. In defense of scientific management. (Iron age, New York. v. 97, April 6, 1916, p. 846–848.) †† VDA

Misrepresentations of the Tavenner bill preamble exposed. Gen. Crozier tells how the government would be adversely affected.

1278. —— Scientific management in arsenals. (Iron trade review, Cleveland. v. 58, March 23, 1916, p. 649–651.) † VHA

Describes the introduction of the Taylor system at the Watertown arsenal.

1279. Cutting costs in our navy yards. (Marine review, Cleveland. v. 46, Nov., 1916, p. 374–377.) † VXA

Shows how simple changes saved money.

1280. Danvers, Richard L. Gospel of good fellowship. (Public service, Chicago. v. 21, Nov., 1916, p. 150–152.) VDA

Efficiency secured by H. F. Frasse, purchasing agent, Edison Electric Illuminating Company, Brooklyn.

1281. Davis, Michael M., jr. Organization of medical service. (Efficiency Society. Journal, New York. v. 5, March, 1916, p. 161–165.) † TMA

1282. Dench, Ernest. Industrial applications of motion pictures. (Machinery, New York. v. 23, Oct., 1916, p. 133–138.) †† VFA

1283. Dispatch system of Norton Grinding Co. (Iron age, New York. v. 98, July 6, 1916, p. 1–5.) † VDA

Planning board visualizes jobs ahead of each machine, and routing sheets indicate dimensions and limits of each operation.

1284. Do American efficiency methods work in England? (Efficiency magazine, London. v. 1, Feb., 1916, p. 25.) TMA

1285. Drafting-room practice in a departmentalized shop. (American machinist, New York. v. 45, Aug. 10, 1916, p. 262–264.) VFA

1286. Drill- and tool-sharpening shop at the Copper Queen mine. (Engineering and mining journal, New York. v. 101, June 24, 1916, p. 1099–1104.) VHA

1287. Drury, Horace Bookwalter. A definition of scientific management. (Efficiency Society. Journal, New York. v. 5, Jan., 1916, p. 21–28.) † TMA

1288. —— Democracy as a factor in industrial efficiency. (American Academy of Political and Social Science. Annals, Philadelphia. v. 65, May, 1916, p. 15–27.) SA

Principles that make for the efficiency of democracy.

1289. Dunlap, John R. Dangerous labor legislation now before Congress. (Engineering magazine, New York. v. 51, April, 1916, p. 1–11.) VDA

1916, continued.

1290. —— Inspiring growth of the new science of industrial management. (Industrial management, New York. v. 52, Nov., 1916, p. 145–148.) **VDA**

1291. **Durell,** Fletcher. Recent progress in efficiency education. (Efficiency Society. Journal, New York. v. 5, May, 1916, p. 249–254.) † **TMA**

1292. **Efficiency.** How to bolster it up and make it strong. (National engineer, Chicago. v. 20, July, 1916, p. 141–142.) † **VFA**

1293. **Efficiency** in accident prevention. (Efficiency Society. Journal, New York. v. 5, June, 1916, p. 320–324.) † **TMA**

1294. **Efficiency** in the pattern shop. (American machinist, New York. v. 44, June 1, 1916, p. 956.) **VFA**

1295. **Efficiency** in production of automobile cylinders. (The Foundry, Cleveland. v. 44, July, 1916, p. 253–262.) † **VIA**

1296. **Efficiency** in serving customers. (Electrical review and western electrician, Chicago. v. 68, Jan. 15, 1916, p. 105.) **VGA**

Meter readers should be instructed that courtesy on the part of employees is essential.

1297. **Efficiency** testing on the Pennsylvania. (Railway age gazette, New York. v. 61, Aug. 18, 1916, p. 279–283, Aug. 25, p. 330–332.) †† **TPB**

1298. **Efficiency** versus financial success. (Coal age, New York. v. 9, June 24, 1916, p. 1103–1104.) † **VGA**

Letter.

1299. **Efficiency-destroying** efforts of politicians. How Congress is seeking to handicap employe and employer. (Manufacturers' record, Baltimore. v. 70, July 6, 1916, p. 65.) † **3-VA**

1300. **Eilertsen,** Th. Industriel Kalkulation efter videnskabelige Principper. (Ingeniøren, København. Aarg. 25, Jan. 1, 1916, p. 2–7.) † **VDA**

1301. **Emery,** James A. Cause and effect of the Tavenner bill. (Iron trade review, Cleveland. v. 58, June 1, 1916, p. 1204.) † **VHA**

1302. **Engel,** W. H. Moderne Fabriksorganisation. 1 table. illus. (Ingeniøren, København. Aarg. 25, April 8, 1916, p. 251–263.) † **VDA**

1303. An **Experiment** in speeding up. (Practical engineer, London. v. 53, May 25, 1916, p. 263–264.) **VDA**

1304. **Factors** in scientific management. (The Electrician, London. v. 77, April 7, 1916, p. 18–19.) **VGA**

Editorial.

1305. **Farnham,** Dwight T. The application of efficiency to factory management. (Brick and clay record, Chicago. v. 48, May 16, 1916, p. 929–931.) **VEA**

1306. —— The application of scientific management to burning clay. (Brick and clay record, Chicago. v. 49, Sept. 5, 1916, p. 403–407.) † **VEA**

Studies a much discussed and important process in the manufacture of clay products from a new angle.

1307. —— The executive and the modern organization. (Engineering magazine, New York. v. 51, July, 1916, p. 485–493.) **VDA**

Points out a better and more effective way of handling the job.

1308. —— How graphic control facilitates the fixing of profits. (Engineering magazine, New York. v. 52, Oct., 1916, p. 16–22.) **VDA**

1309. —— Scientific versus intuitive administration. (Engineering magazine, New York. v. 51, Sept., 1916, p. 849–854.) **VDA**

1310. —— Visualizing the essential facts of a business. (Engineering magazine, New York. v. 51, Aug., 1916, p. 651–656.) **VDA**

Uses graphs and shows what facts should be so represented.

1311. —— What scientific management accomplishes for the employer and employee. (Brick and clay record, Chicago. v. 49, Sept. 19, 1916, p. 503–506, Oct. 3, p. 587–589.) † **VEA**

1312. **Faurote,** Fay L. The new Ford line-up. (Engineering magazine, New York. v. 50, Jan., 1916, p. 540–545.) **VDA**

Changes in personnel of the Ford Motor Co.

1313. **Faus,** H. W. Where German efficiency falls down. (Railway age gazette, New York. v. 60, June 16, 1916, p. 1329–1332.) †† **TPB**

Facts taken from official statistics of railways in Germany.

1314. **Favor** bill to eliminate efficiency. House committee expected to approve Tavenner bill prohibiting scientific management in government shops. (Iron trade review, Cleveland. v. 58, April 20, 1916, p. 897.) † **VHA**

1315. **Feiss,** Richard A. Building up an organization. (Dodge idea, Mishawaka, Ind. v. 32, July, 1916, p. 742–743, 761.) †† **VFA**

1316. —— Current legislation and scientific management. (Efficiency Society. Journal, New York. v. 5, June, 1916, p. 286–291.) † **TMA**

1317. —— "Defeat Tavenner bill." (Iron trade review, Cleveland. v. 58, May 11, 1916, p. 1053–1055.) † **VHA**

Gives actual results in his own factory.

1916, continued.

1318. —— Personal relationship as a basis of scientific management. (American Academy of Political and Social Science. Annals, Philadelphia. v. 65, May, 1916, p. 27–56.) **SA**

Correct method of handling men.

1319. **Field,** E. B. The little brass check in the crow's nest. (Coal age, New York. v. 9, March 18, 1916, p. 488–490.) † **VHWA**

Substitutes mechanical for manual methods of keeping records.

1320. The **Fight** against efficiency. (Engineering record, New York. v. 74, July 15, 1916, p. 66.) **VDA**

1321. **Finlay,** James R. The problem of efficiency. (Colorado School of Mines quarterly, Golden, Colo. v. 2, July, 1916, p. 1–6.) **VHA**

1322. **Florence,** P. S. When the worker tires. How fatigue's effect on output and accidents may be minimised by rest pauses. (System, London. v. 29, Jan., 1916, p. 11–16.) **TMA**

1323. **Freeland,** W. E. How a Worcester plant controls production. (Iron age, New York. v. 98, Oct. 5, 1916, p. 747–753.) † **VDA**

Production department and dispatching division of Heald Machine Co.

1324. —— Production system in a 75 man shop. (Iron age, New York. v. 98, Oct. 19, 1916, p. 871–876.) † **VDA**

New plant of Waterbury Tool Co., and some routing methods employed.

1325. **Frey,** John P. Scientific management and labor. (International molders' journal, Cincinnati. v. 52, March – May, 1916, p. 209–213, 316–321, 417–423.) **TDRA**

Abstract in *American Federationist,* Washington, v. 23, April – May, 1916, p. 257–268, 358–368, *TDR.*

1326. **Gantt,** Henry Laurence. Engineering schools and industrial methods. (Engineering magazine, New York. v. 51, May, 1916, p. 161–166.) **VDA**

Colleges must unite in directed effort to educate and train men for responsible positions.

1327. —— The importance of leadership. Industry after the war. (Engineering magazine, New York. v. 51, April, 1916, p. 17–21.) **VDA**

1328. —— Industrial leadership; address delivered in the Page lecture series, 1915, before the senior class of the Sheffield Scientific School, Yale University. New Haven: Yale University Press, 1916. xii p., 1 l., 128 p. illus. 12°. (Page lectures, 1915.) **TM**

Application of the principles set forth would go a long way toward settling most labor troubles.

1329. —— Production and sales. (Engineering magazine, New York. v. 50, Jan., 1916, p. 593–600.) **VDA**

Output of factory should not bear the total expense but only portion required to produce it.

1330. —— The relation between cost and expense. (Gas engine, Cincinnati. v. 18, Oct., 1916, p. 521–524.) **VFA**

1331. **Gilbreth,** Frank Bunker. The effect of motion study upon the workers. (American Academy of Political and Social Science. Annals, Philadelphia. v. 65, May, 1916, p. 272–276.) **SA**

Method and apparatus used, with results.

1332. —— Methods of analyzing motion by graphical charts. (American machinist, New York. v. 45, Aug. 10, 1916, p. 237–239.) **VFA**

Shows methods of graphically visualizing motions in order to analyze their kind, duration and sequence.

1333. **Gilbreth,** Frank Bunker, and MRS. L. M. GILBRETH. Chronocyclegraph motion devices for measuring achievement. (Efficiency Society. Journal, New York. v. 5, March, 1916, p. 137–149.) † **TMA**

1334. —— Conserving the worker's health and energy. (Iron age, New York. v. 97, April 6, 1916, p. 826–828.) † **VDA**

1334a. —— Fatigue study; the elimination of humanity's greatest unnecessary waste; a first step in motion study. New York: Sturgis & Walton Co., 1916. 6 p.l., 3–159 p., 17 pl. 12°. **TDI**

1335. —— Holding and helping employees to help themselves. (Dodge idea, Mishawaka, Ind. v. 32, Aug., 1916, p. 784, 797–798.) †† **VFA**

1336. —— The motion model and the age of measurement. (The Dodge idea, Mishawaka, Ind. v. 32, May, 1916, p. 662, 671, 683–685, 687.) †† **VFA**

1337. —— The three position plan of promotion. (American Academy of Political and Social Science. Annals, Philadelphia. v. 65, May, 1916, p. 289–296.) **SA**

1338. —— The work, the worker and his wages. (Iron age, New York. v. 97, March 9, 1916, p. 602–604.) **VDA**

Various features of wage systems of scientific management, and an answer to the objections of workers to increasing output.

1339. **Gilmore,** Hinton. Women's new place in industry. illus. (System, London. v. 29, Jan., 1916, p. 6–10.) **TMA**

1340. **Godfrey,** Stuart C. Cost-keeping and efficiency in works of the Engineer Department. (United States. — Engineer Corps. Professional memoirs, Washington, D. C. v. 8, Jan./Feb., 1916, p. 1–30.) **VDA**

Abstract in *The Contractor,* Chicago, v. 23, Feb. 15, 1916, p. 29–31, *VEA.*

1916, continued.

1341. **Greul,** W. Herman. Oppose the Tavenner legislation. (100%, Chicago. v. 7, July, 1916, p. 21–22.) **TMA**

1342. **Haanel,** H. E. Efficiency testing in train service. (Railway age gazette, New York. v. 61, July 28, 1916, p. 155–157.) †† **TPB**

The difference between efficiency testing and surprise checking.

1343. **Hackett,** J. D. Breaking down the language barrier. (Iron age, New York. v. 97, Feb. 3, 1916, p. 293–294.) † **VDA**

Teaching the foreign laborer to speak English by a system of instruction cards; method applicable to any language.

1344. **Hammond,** Edward K. Tool system of Cadillac Motor Car Company. (Machinery, New York. v. 22, June, 1916, p. 867–876; v. 23, Oct., 1916, p. 143–153.) **VFA**

1345. **Hauer,** Daniel J. Devising a system for carrying on construction. (The Contractor, Chicago. v. 23, May 15, 1916, p. 29–31.) **VEA**

Shows what a system is and how it can be built up to make an organization more efficient.

1346. —— How a cost keeping system should be devised and used. (The Contractor, Chicago. v. 23, April 15, 1916, p. 29–31.) **VEA**

Describes methods of keeping costs, with reasons for the system advocated.

1347. —— Scientific management in concrete construction work. (The Contractor, Chicago. v. 23, Feb. 1, 1916, p. 36–37.) **VEA**

Shows how concrete work can be made more profitable by the introduction of modern methods of management.

1348. —— Scientific management in planning construction jobs. (The Contractor, Chicago. v. 23, Jan. 15, 1916, p. 24–25.) **VEA**

Takes up the application of improved management in detail, showing how greater efficiency may be obtained.

1349. **Higgins,** Robert W. How to increase the output with the present force. (Engineering magazine, New York. v. 51, July, 1916, p. 562–566.) **VDA**

System described in use for two years at the White Manufacturing Co.

1350. **Hill,** George F. A unit time-task and pay-roll system. (Electrical review and western electrician, Chicago. v. 68, April 15, 1916, p. 681–683.) † **VGA**

Emphasizes the desirability and limitations of unit cost data, particularly labor costs.

1351. **Hillyer,** E. C. Efficiency engineering applied to a 100,000 capacity plant. (The Clay worker, Indianapolis. v. 65, March, 1916, p. 312–316.) † **3 – VEA**

Johnson & Johnson Co., Raleigh, N. C.

1352. **Hoadley,** E. E. The efficiency of labor. (Electrical review, London. v. 78, April 21, 1916, p. 464–465.) **VGA**

For central stations.

1353. **Hoke,** C. M. Bringing a jewelry factory up to date. (Metal industry, New York. v. 22 [new series, v. 14], Jan.–March, 1916, p. 18–19, 72–73, 107–108.) † **VIA**

1354. **Holland,** W. H. Fairness of time study methods in setting rates. (100%, Chicago. v. 6, May, 1916, p. 19–22.) **TMA**

1355. **Hopf,** Harry A. The planning department as a factor in the modern office organization. (100%, Chicago. v. 6, Jan., 1916, p. 13–18.) **TMA**

1356. **Hoxie,** Robert H. Scientific management and social welfare. (Survey, New York. v. 35, March 4, 1916, p. 673–680, 685–686.) **SHK**

1357. **Humphrey,** A. L. Mobilization of industrial resources. (Iron age, New York. v. 98, Aug. 3, 1916, p. 234–238.) † **VDA**

Experiences of the Westinghouse Air Brake Co. in the manufacture of war munitions.

1358. **Hyde,** E. U. Qualifying the term "Efficiency." (Electrical news, Toronto. v. 25, Oct. 1, 1916, p. 51–52.) † **VGA**

Term is ambiguous and apt to be misleading; other factors to be considered besides cost.

1359. **Importance** of time and motion studies. (100%, Chicago. v. 6, June, 1916, p. 110–112.) **TMA**

1360. **In** defense of scientific management. (Iron age, New York. v. 97, April 6, 1916, p. 846–848.) **VDA**

Misrepresentation of the Tavenner bill preamble exposed. Gen. Crozier tells how the government would be adversely affected.

1361. **Increasing** drafting room efficiency by improved furniture design and arrangement. (Engineering and contracting, Chicago. v. 46, Aug. 30, 1916, p. 194.) **VDA**

1362. An **Investigation** of scientific management. (Efficiency magazine, London. v. 2, July, 1916, p. 9.) † **TMA**

1363. **Irazar,** Pedro R. Organizaciones que conducen á la eficiencia. (Revista de la Sociedad cubana de ingenieros, Habana. tomo 8, June, 1916, p. 450–458.) **VDA**

1364. **Jacobs,** F. R. Practical efficiency. (Iron tradesman, Atlanta, Ga. v. 76, Sept., 1916, p. 31–32.) † **VA**

1365. **Johnston,** Samuel P. The planning room. (Acetylene journal, Chicago. v. 17, April, 1916, p. 412, 423.) † **VOA**

1366. **Jones,** Edward David. The administration of industrial enterprises, with special reference to factory practice. 1916. **TM**

1916, continued.

1367. Jones, J. G. True efficiency. (Gas industry, Buffalo. v. 16, Sept., 1916, p. 485.) † VOL

1368. Kennard, Beulah. Efficiency in the department store. (Efficiency Society. Journal, New York. v. 5, Feb., 1916, p. 48–50.) † TMA

1369. Kennedy, R. E. Improving methods in the foundry. (Iron age, New York. v. 98, Sept. 28, 1916, p. 706–707.) † VDA

An analysis of conditions of labor, materials and equipment accompanied by time and motion studies will effect large economies.

1370. Kennedy, William M. Scientific studies applied to riveting. (International marine engineering, New York. v. 21, Sept., 1916, p. 408–415.) VXA

Cost of riveting in ship construction analyzed; methods of reducing costs.

1371. Kinnison, C. S. Straight line forge shop plant lay-out. (Steel and iron, Pittsburgh. v. 50, Sept., 1916, p. 277–280.) † VA

1372. Kent, Robert Thurston. Employing methods that make good workers. (Iron age, New York. v. 98, Aug. 3, 1916, p. 244–247.) † VDA

The lowest labor turn-over in the industry has resulted from the methods used in a middle western plant, that of the Joseph & Feiss Company, Cleveland, O.

1373. Kent, William. Asks aid to defeat Tavenner bill. (Iron trade review, Cleveland. v. 58, April 27, 1916, p. 939–940.) † VHA

Tells dangers of latest attack by Congress on scientific management. Urges delay until impartial investigation can be made.

1374. Kimball, Dexter Simpson. Industrial organization and the technical schools. (Engineering magazine, New York. v. 52, Oct., 1916, p. 104–108.) VDA

1375. Kincaid, F. T. Making it worth while to cut costs. (System, London. v. 30, Aug., 1916, p. 90–95.) TMA

Method secured more work from both office and mill employees and furnished check on production.

1376. Klingman, J. D. Efficiency testing on the Schuylkill Division. (Railway age gazette, New York. v. 61, Aug. 25, 1916, p. 332.) †† TPB

1377. Knoeppel, Charles Edward. Industrial lessons from the German war machine. Principles of German military efficiency. (Engineering magazine, New York. v. 50, March, 1916, p. 853–859.) VDA

1378. —— Industrial preparedness. New York: The Engineering Magazine Co., 1916. vi, ii, 145 p. 12°. (Industrial management library.) TAH

1379. Knoeppel, Charles Edward, and HAROLD BUTT. Relation between the accountant and the efficiency engineer. (Journal of accountancy, New York. v. 21, Feb., 1916, p. 101–113.) TMA

1380. Lake, E. F. Planning a foundry from its future operations. (Foundry, Cleveland. v. 44, June, 1916, p. 215–217.) VIA

How architects for the Dodge Bros. new casting plant figured every detail of work and equipment before designing the buildings.

1381. Lecler, Paul. L'organisation industrielle. L'abaissement du prix de revient. (Société internationale des électriciens. Bulletin, Paris. année 6, July, 1916, p. 309–330.) VGA

1382. Lee, John R. The so-called profit sharing system in the Ford plant. (American Academy of Political and Social Science. Annals, Philadelphia. v. 65, May, 1916, p. 297–310.) SA

1383. Legislating dishonesty and inefficiency. (Contracting, New York. v. 4, Sept., 1916, p. 203.) VEA

1384. Le Mont, F. H. Fitting to-day's plant to tomorrow's needs. (Factory, Chicago. v. 16, Jan. – March, 1916, p. 23–26, 139–140, 234–237.) TMA

1385. Lewis, Elias St. Elmo. Getting the most out of business. (The Dodge idea, Mishawaka, Ind. v. 32, March, 1916, p. 606.) †† VFA

1386. —— Six principles of scientific salesmanship. (Engineering magazine, New York. v. 51, Sept., 1916, p. 837–842; v. 52, Oct., 1916, p. 10–15.) VDA

1387. Liversedge, A. J. The training of engineering foremen and works managers. (Mechanical world, London. v. 59, May 5, 1916, p. 208, May 26, p. 250–251, June 9, p. 276, June 30, p. 317–318; v. 60, July 28, 1916, p. 44, Aug. 11, p. 68–69, Sept. 22, p. 140–141, Oct. 6, p. 160.) † VFA

1388. Lynde, Charles C. Scheduling work for light manufacturing. (Steel and iron, Pittsburgh. v. 50, Oct., 1916, p. 309–313.) VIA

Shows how a plant having a varied line arranges its units and schedules its work to give best production.

1389. —— Shortening operation time in automobile shops for increased production. (Steel and iron, Pittsburgh. v. 50, Jan., 1916, p. 1–7.) VIA

Some short cuts and improved methods developed in plants to produce two machines where one used to appear.

1390. McAloney, W. H. About scientific management. (Aera, New York. v. 4, June, 1916, p. 1239–1242.) TPB

Possibility of increasing efficiency.

1391. McHenry, William E. Is your cost system scientific? (Engineering magazine, New York. v. 51, Aug., 1916, p. 678–686.) VDA

1916, continued.

1392. McLaughlin, Thomas J. Efficiency in shipping. (Efficiency Society. Journal, New York. v. 5, June, 1916, p. 306–311.) † **TMA**

1393. Maize, F. P. Planning and efficiency system in Portland, Oregon, shops. (Electric railway journal, New York. v. 47, March 18, 1916, p. 539–549.) **TPB**

Abstract in *Engineering magazine,* New York, v. 51, May, 1916, p. 273–275, *VDA.*

By centralizing the planning and other clerical work the effectiveness of the shop force has been increased.

1394. Martell, P. Über Prämienlohnsysteme. (Schweizerische elektrotechnische Zeitschrift, Zürich. Jahrg. 13, Heft 28, July 15, 1916, p. 219–220.) † **VGA**

1395. Mason, J. K. How to study factory efficiency. (Engineering magazine. New York. v. 51, June–July, 1916, p. 394–400, 543–547.) **VDA**

Analysis of operation.

1396. —— Synthetic costs. (Engineering magazine, New York. v. 52, Oct., 1916, p. 63–66.) **VDA**

How cost records should be determined from analysis of the distribution of expense in an industrial plant is clearly shown.

1397. Meyer, John L. Handling clerks like newspaper reporters. (System, London. v. 29, June, 1916, p. 431–436; v. 30, Aug., 1916, p. 97–102.) **TMA**

Idea based on newspaper engagement books, by means of which events are followed and reporters assigned to them.

1398. Miller, Fred. J. Scientific management: its installation and operation. (Efficiency Society. Journal, New York. v. 5, March, 1916, p. 118–136.) † **TMA**

Remington Typewriter Co.

1399. Modern shop management. (Iron age, New York. v. 98, Aug. 10, 1916, p. 310–311.) **VDA**

Some preliminary steps in introducing it — one need of job analysis shown.

1400. Montague, O. E. Selecting the wage plan for a small shop. (Steel and iron, Pittsburgh. v. 50, Sept., 1916, p. 294.) † **VA**

1401. Motion study for the crippled soldier. (The Iron and coal trades review, London. v. 92, Feb. 11, 1916, p. 158.) † **VIA**

1402. Nicholas, Frederic. Efficient employees are an element in costs. (Electrical world, New York. v. 68, Aug. 26, 1916, p. 410–411.) **VGA**

1403. No heed to men who know. (Iron age, New York. v. 97, April 20, 1916, p. 953.) †† **VDA**

Scientific shop management opposed for labor union reasons.

1404. Orcutt, H. F. L. Trade war and productive power. (Engineering, London. v. 102, Aug. 4, 1916, p. 110–112.) † **VDA**

Abstract printed in *Iron age,* New York, v. 98, Aug. 24, 1916, p. 412–413, † *VDA.*

1405. Organization. (100%, Chicago. v. 7, July, 1916, p. 26–29.) **TMA**

1406. Patch, D. Time study eliminates costly details of design. (Engineering record, New York. v. 73, June 3, 1916, p. 749–750.) **VDA**

1407. Paying bonuses to indirect labor. (Iron age, New York. v. 97, Feb. 10, 1916, p. 366–376.) **VDA**

Production and routing methods and way of rewarding effort at plant of Northway Motor & Mfg. Co., Detroit.

1408. Pearce, H. C. Determination of efficiency in the supply department. (Railway age gazette, New York. v. 61, Aug. 4, 1916, p. 200–202.) †† **TPB**

1409. Perkins, F. M. First principles of shop planning. (Iron trade review, Cleveland. v. 58, Jan. 20, 1916, p. 187–192.) **VHA**

Describes pattern shop and new foundry at the Puget Sound navy yard. Here scientific management has received direct application.

1410. Planning work ahead in the foundry. (Iron age, New York. v. 97, May 25, 1916, p. 1247–1250.) †† **VDA**

Methods to insure delivery of castings on time and to facilitate molding and pouring with minimum labor and material waste.

1411. Plunkett, Sir Horace. Need of efficiency in farming. (Efficiency Society. Journal, New York. v. 5, March, 1916, p. 150–152.) **V p. box**

1412. Polakov, Walter N. Operating power costs. (Iron age, New York. v. 97, Jan. 13, 1916, p. 142–143.) **VDA**

A method of standardization to show how closely the minimum is approached.

1413. —— Standardization of power plant operating costs. (American Society of Mechanical Engineers. Journal, New York. v. 38, April, 1916, p. 290–297.) **VFA**

Outlines method by which owners can judge how close actual performance of plant is to possible minimum cost at any time.

1414. Poole, Ralph T. The point system in the New York office. (Efficiency bulletin, Kalamazoo, Mich. v. 3, Feb., 1914, p. 5–6.) **TMA**

1415. Porter, Harry F. Cost keeping the basis of prosperity. (Engineering magazine, New York. v. 51, June, 1916, p. 325–332.) **VDA**

Notable work of the Federal Trade Commission.

1416. Premium wage payments. (Iron age, New York. v. 97, Feb. 24, 1916, p. 517.) **VDA**

Inquiry of Efficiency Society for facts on the subject.

1916, continued.

1417. Prentiss, F. L. Making motor trucks in the White plant. (Iron age, New York. v. 98, Aug. 17, 1916, p. 344–349.) † **VDA**

Some of the production methods followed — system of shop management, employing and paying and hospital service.

1418. The **Principles** of efficiency. (The Review, Chicago. v. 13, Oct., 1916, p. 492–495.) **VIA**

1419. R., C. C. Some points affecting drawing office efficiency. (Mechanical world, London. v. 60, July 14, 1916, p. 16.) **VFA**

1420. Radebaugh, Gustav H. Maximum production from tools. (American machinist, New York. v. 44, Feb. 17, 1916, p. 281–284.) **VFA**

The centralized control of a school shop planned to teach the principles of production and govern the manufacturing in the shop itself. A number of special tools are shown, together with specimen time-sheet and instruction cards.

1421. Rankin, R. "Speeding up" in an engineering factory. (Electrician, London. v. 77, April 21, 1916, p. 90–91, April 28, p. 110–113.) **VGA**

Abstract of paper read before the Junior Institution of Engineers.

Also in *Mechanical world,* London, v. 59, May 26, 1916, p. 254–255, June 16, p. 288–289; v. 60, July 14, 1916, p. 17, July 28, p. 40–41, † *VFA.*

1422. Rear, George W. Efficiency in the railway bridge and building department. (Engineering and contracting, Chicago. v. 45, Jan. 12, 1916, p. 39–41.) **VA**

Paper presented at annual convention of American Railway Bridge and Building Association.

1423. Redtmann, C. Die Organisation des Magazins einer grossen Maschinenfabrik. (Schweizerische elektrotechnische Zeitschrift, Zürich. Jahrg. 13, Sept. 2, 1916, p. 275–276, Sept. 9, p. 282–283, Sept. 16, p. 290–292, Sept. 23, p. 298–299, Sept. 30, p. 307–308.) **VGA**

1424. Reese, Chester. Training men as an army develops soldiers. (The Dodge idea, Mishawaka, Ind. v. 32, April, 1916, p. 624–625.) †† **VFA**

1425. Rindge, Fred H. Can the human side of engineering be taught? (Industrial management, New York. v. 52, Nov., 1916, p. 206–212.) **VDA**

1426. —— Developing the human side in industry. (Iron age, New York. v. 97, May 25, 1916, p. 1264–1265.) †† **VDA**

Industrial service movement of the Young Men's Christian Association.

1427. —— Importance of the human factor. (Engineering and mining journal, New York. v. 102, Sept. 23, 1916, p. 543–545.) † **VHA**

Success in all business to-day depends upon the worker's character, efficiency and friendliness.

1428. Roberts, E. I. Coal-mine warehouse systems. (Coal age, New York. v. 9, Jan. 15, 1916, p. 115–117, Jan. 22, p. 154–156.) † **VHWA**

1429. Rockwell, Williard F. The organization of a modern foundry. (Iron age, New York. v. 97, April 6, 1916, p. 823–824.) †† **VDA**

How responsibility for good service is placed in the jobbing plant of the Metals Production Equipment Co.

1430. Roe, Joseph W. How the college can train managers. (Engineering magazine, New York. v. 51, July, 1916, p. 537–542.) **VDA**

1431. The **Routing** of materials in a modern tire plant. (India rubber world, New York. v. 54, July 1, 1916, p. 548.) † **VMV**

1432. Roux, George P. Electric power transmission economics. (General Electric review, Schenectady, N. Y. v. 19, Oct., 1916, p. 869–878.) **VGA**

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1434. Russell, H. A. Keeping track of work in process. A combined production-operation order cost record serves to locate every part of every order at any time. (Iron age, New York. v. 98, July 6, 1916, p. 6–9.) † **VDA**

1435. Russell, Thomas. Welfare work in the old world to make employees efficient. (Efficiency Society. Journal, New York. v. 5, April, 1916, p. 199–207.) † **TMA**

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1437. Scandlin, Horace W. Mail order efficiency in department stores. (Efficiency magazine, New York. v. 6, Feb., 1916, p. 1–2.) † **TMA**

1438. Scholl, J. C. Boiler room practice at Warrior Ridge. (Power, New York. v. 43, Jan. 18, 1916, p. 93–94.) **VFA**

1439. Schulze, J. William. The task system applied to executive officers. (100%, Chicago. v. 7, Aug., 1916, p. 23–28.) **TMA**

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1442. Scientific management in government workshops. (Machinery, New York. v. 22, May, 1916, p. 825.) **VFA**

1443. Scientific management and legislation. (Engineering and contracting, Chicago. v. 45, April 19, 1916, p. 359–360.) **VDA**

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1444. Scientific management for mechanical purposes. (100%, Chicago. v. 6, Jan., 1916, p. 74–80, Feb., 1916, p. 74–82.) **TMA**

1445. Scientific management should explain itself. (100%, Chicago. v. 6, Feb., 1916, p. 66–68.) **TMA**

1446. Scovell, Clinton H. Determination of foundry costs. (Iron age, New York. v. 98, Oct. 5, 1916, p. 764–765.) † **VDA**

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1447. Senate puts stamp on inefficiency. Grotesque ignorance concerning the purpose and method of time studies. Labor union orders again obeyed. (Iron age, New York. v. 98, Aug. 3, 1916, p. 259–260.) † **VDA**

1448. Silberberg's master cronograph. (Automobile, New York. v. 34, Feb. 17, 1916, p. 329.) **TON**

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1449. Smith, J. D. Instituting a piece work system. (Mechanical engineer, London. v. 59, May 19, 1916, p. 238, June 2, p. 269.) **VFA**

1450. Some efficiency lessons from Germany. (Efficiency magazine, New York. v. 6, Feb., 1916, p. 3.) † **TMA**

1451. "Speeding up in an engineering factory." (Electrician, London. v. 77, May 5, 1916, p. 160–162, May 12, p. 193–194, May 26, p. 261–262.) **VGA**

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1452. Spencer, Albert S. Industrial efficiency. The national demand for the reform of our economic system. (Machinery market, London. June 23, 1916, p. 19–20, June 30, 1916, p. 19–20.) † **3 – VFA**

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1454. Stimson, E. System for standardizing maintenance of way work. (Railway age gazette, New York. v. 60, Jan. 21, 1916, p. 111–114.) †† **TPB**

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1456. Strebig, Ira I. Experiences of an inspector on the Schuylkill Division. (Railway age gazette, New York. v. 61, Aug. 25, 1916, p. 331–332.) †† **TPB**

1457. Strongly condemns Tavenner bill. Representative Browne files vigorous report. Majority report on Tavenner bill. Government employes oppose change. (Iron trade review, Cleveland. v. 58, May 25, 1916, p. 1164–1166.) † **VHA**

1458. Stronck, Hubert N. Points covered by efficiency engineering as applied to mining. (Colorado School of Mines magazine, Golden, Col. v. 6, Feb., 1916, p. 37–40.) **VHA**

1459. The **Stop** watch and the lawn mower. (Iron age, New York. v. 97, June 8, 1916, p. 1397.) † **VDA**

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1460. Summer session in scientific management. (Metallurgical and chemical engineering, New York. v. 14, May 15, 1916, p. 584.) **VIA**

1461. Tarrant, Stanley C. Cutting down overtime. (System, Chicago. v. 29, May, 1916, p. 226–228.) **TMA**

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1462. Tavenner bill. (Engineering magazine, New York. v. 51, April, 1916, p. 1–11.) **VDA**

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1463. Tavenner bill. Status of movement to kill scientific management in government shops. (Iron age, New York. v. 97, April 13, 1916, p. 911.) †† **VDA**

1464. Tavenner bill reported. Majority and minority reports presented with this bill. (Iron age, New York. v. 97, May 25, 1916, p. 1270–1271.) † **VDA**

1465. Taylor Society conference. (100%, Chicago. v. 6, May, 1916, p. 32–34, June, p. 13–28.) **TMA**

1466. Taylor Society holds big meeting. Efficiency organization convenes at Ann Arbor. (Iron trade review, Cleveland. v. 58, May 18, 1916, p. 1107–1108.) † **VHA**

1467. Taylor system in street railway shop. (Engineering magazine, New York. v. 51, May, 1916, p. 273–275.) **VDA**

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1468. Teaching shop management by motion pictures. (American machinist, New York. v. 45, Aug. 17, 1916, p. 293–294.) **VFA**

1469. Thompson, Clarence Bertrand. How scientific management works. (System, London. v. 29, Feb. – June, 1916, p. 89–97, 201–209, 285–292, 348–354, 442–448; v. 30, Aug., 1916, p. 114–119.) **TMA**

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tem of "scientific management" to appear in a British magazine.

1. How scientific management works. 2. Storing materials. 3. Controlling work in progress. 4. Dealing with inspection. 5. Running the tool room. 6. Distributing a foreman's duties.

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1474. Towne, Henry R. The engineer as an economist. (Engineering magazine, New York. v. 51, April, 1916, p. 12–16.) **VDA**

1475. Tribute to F. W. Taylor at annual meeting. (American Society of Mechanical Engineers. Journal, New York. v. 38, Jan., 1916, p. 53–56.) **VFA**

1476. Tookey, W. A. Modernisation of power plant in factories. (Mechanical engineer, Manchester. v. 37, Jan. 14, 1916, p. 18–21, Jan. 21, p. 38–41.) † **VFA**

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1479. Twyford, H. B. Buying material on a scientific basis. (Iron age, New York. v. 98, July 6, 1916, p. 16–19.) † **VDA**

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1481. Urges Congress drop Tavenner bill. Wilfred Lewis vigorously defends efficiency systems. (Iron trade review, Cleveland. v. 58, June 1, 1916, p. 1203–1204.) † **VHA**

1482. Van Deventer, John Herbert. Getting "into" the small shop. (American machinist, New York. v. 44, Jan. 13, 1916, p. 53–54.) **VFA**

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1483. Vicious theory advanced in Tavenner bill. (Mining Congress journal, Washington, D. C. v. 2, July, 1916, p. 333.) **VHA**

1484. Weaton, George F. Efficient power plant operation and management. (National engineer, Chicago. v. 20, Feb., 1916, p. 57–61.) † **VFA**

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1485. Wellman Seaver Morgan Co., Cleveland, O. Drafting room practice in a departmentalized shop. (Engineering news, New York. v. 76, Aug. 3, 1916, p. 218–220.) †† **VDA**

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1488. Whitney, H. A. Water management organization and management under municipal control. (Canadian engineer, Toronto. v. 31, Sept. 28, 1916, p. 248–250.) † **VDA**

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1490. Will efficiency win? (Iron trade review, Cleveland. v. 59, Oct. 26, 1916, p. 811.) **VHA**

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1491. Will rush bill against efficiency. Congressional committee expected to make favorable report on measure which penalizes use of scientific methods of shop management. (Iron trade review, Cleveland. v. 58, April 13, 1916, p. 805.) † **VHA**

1492. Wolf, Robert B. Developing the plant organization's individuality. (Dodge idea, Mishawaka, Ind. v. 32, May, 1916, p. 663, 674–677.) †† **VFA**

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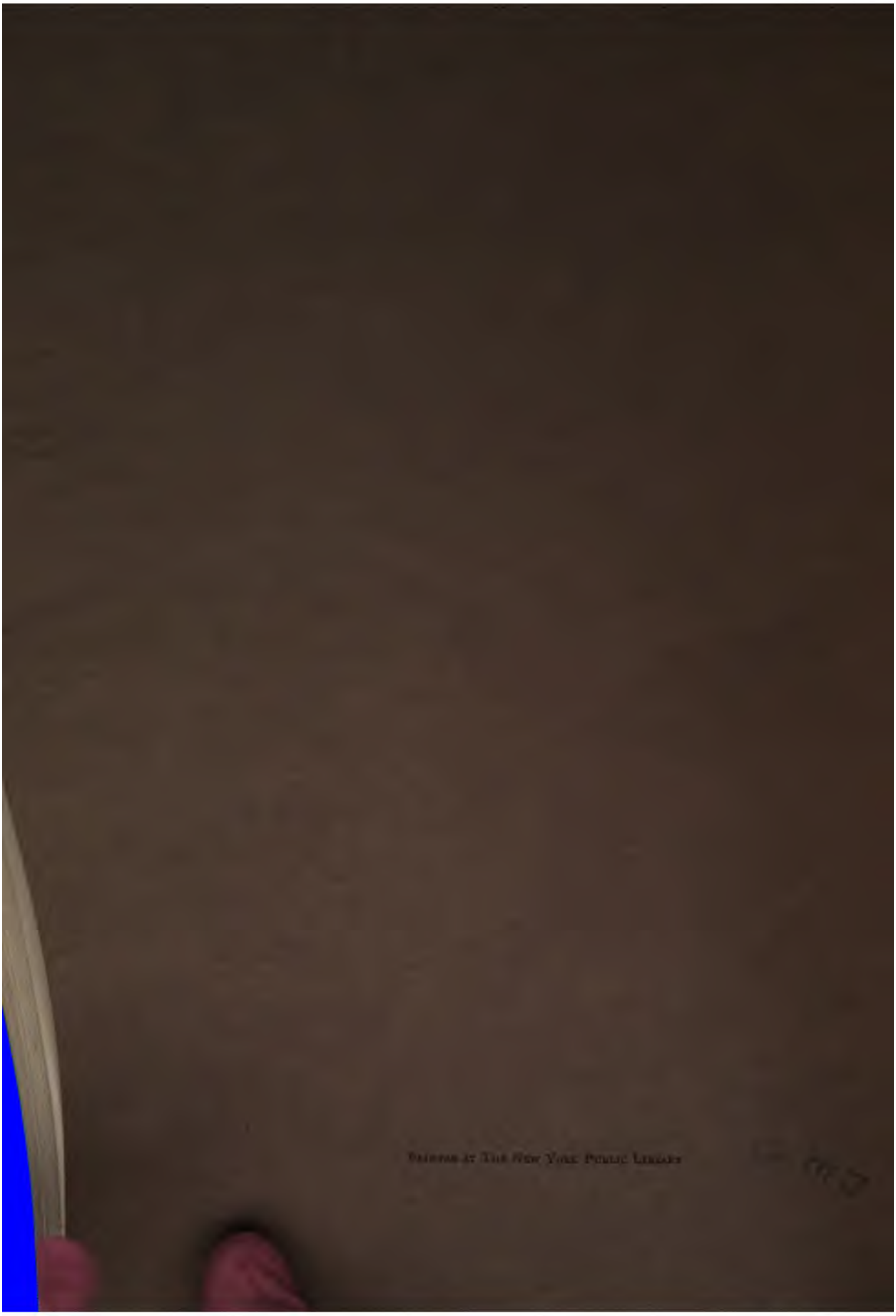
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